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DIESEL RAILWAY TRACTION

The June issue of this RAILWAY GAZETTE *Publication, illustrating and describing developments in Diesel Railway Traction, will be ready on June 2, price 2s.*

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THE RAILWAY GAZETTE
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Co-operators *v.* State Ownership

ALTHOUGH the Whitsuntide holiday was marked generally by fine weather, the crowds at railway stations were smaller than at holiday times in recent years. At some London railway stations extra trains were brought into service; it was reported that from Liverpool Street 28 relief trains were run to the Norwich and Cromer area on Saturday last, and some 20 additional trains left Kings Cross for the north. As usual, Whitsuntide was marked by a number of conferences, of which the most important was that of the Labour Party which opened at Margate. There it was made clear that a number of delegates are anxious to press on with further stages of nationalisation, and to bring under State control such diverse industries as cotton, chemicals, motors, shipbuilding, and brewing. Mr. G. L. Perkins, in his Presidential address to the Co-operative Congress at Brighton, said that although Co-operators had consented fully to the nationalisation of mines, the Bank of England, transport and power undertakings, it did not mean that the movement was prepared to enter into a "suicide pact" for the transfer of its own services, trades, and industry to any national boards or State corporations.

* * * *

Another City of London Plan

The final report of the joint town-planning consultants for reconstruction in the City of London, Dr. Charles Holden and Professor W. G. Holford, has now been before the Court of Common Council. The scheme is far-reaching in its proposals, and envisages first a 30-year development plan, and secondly a 10-year plan; the latter of which would be considered as an immediate programme of action under the Planning Acts. It assumes a building labour force beginning at 550 and rising to 5,000 by 1965. So far as railways in the City are concerned, the report suggests improvements to the approaches to Liverpool Street and Broad Street Stations, and the use of the railway bridge at Blackfriars for a new road bridge, after the removal of the Holborn railway viaduct. This has been recommended already in the Railway (London Plan) Committee's report, and would mean the disappearance of the railway bridge across the foot of Ludgate Hill. It would also be contingent on the tunnel scheme advocated by that committee.

* * * *

Pullman Incorporated

It will be recalled that in November, 1945, Pullman Incorporated entered into an agreement for the sale of its sleeping car operating subsidiary, the Pullman Company, to a group of United States railways. This action was taken in compliance with a separation decree of the U.S. District Court. The report for 1946 of Pullman Incorporated recalls that consummation of the sale was held up by appeals to the Supreme Court by the Department of Justice and rival bidders. Operation of the company's sleeping car service was continued throughout 1946 for the account of the railway buying group as the potential purchaser. On January 31, 1947, examiners of the Interstate Commerce Commission recommended approval of the arrangement submitted in the application of the buying group for its proposed pooling or division of traffic, service, or earnings in the conduct of the sleeping car business, in the event that the Supreme Court approves the sale of the capital stock of the Pullman Company to the group. Opportunity was given to file exceptions to the examiner's recommendation; argument will be presented, and the matter will then rest with the Commission. The argument before the Supreme Court was held in March, but its decision had not been handed down when the report was printed.

* * * *

The Darlington Operating District, L.N.E.R.

Many members attending the convention of the Railway Students' Association in Darlington last week were paying their first visit to the L.N.E.R. North-Eastern Area. It was appropriate, therefore, for the opening paper read to the meeting to describe the traffic and boundaries of the Darlington District. Mr. T. B. Hare, Principal of the L.N.E.R. All-Line Operating School at Grantly, who presented the paper as reported on page 570, showed how his study of the merging of two operating districts on the Danish State Railways led

him to make proposals for eliminating the boundary then existing between the Darlington and Middlesbrough districts of the L.N.E.R. A revision was agreed to by Mr. C. M. Jenkin Jones, then Superintendent, North-Eastern Area, at York. The enlarged territory of 1932 proved readily manageable, because Mr. Jenkin Jones brought about an adjustment of the engineering and goods districts in the area to coincide with the new operating district. The result was to bring both ends of the main traffic streams into the one district. One outcome was the closing of Shildon yard, and direct working of traffic between the collieries and Newport yard. The merger also enabled passenger connections to be improved, and was followed by the introduction in 1933 of the regular-interval service between Darlington and Saltburn.

* * * *

Transport Requirements of the Heavy Industries

Visits to the River Tees and to the Consett Iron Works, held in conjunction with the Darlington convention of the Railway Students' Association, provided a practical background to the paper on "The Transport Requirements of the Heavy Industries," read on the second day of the meeting by Mr. H. F. Sanderson, Principal of the L.N.E.R. All-Line Commercial School at Faverdale Hall. Mr. Sanderson referred to the efforts being made to develop the working of coal in full train loads from colliery to destination, and quoted quicker turn-round of wagons, improved transits, and relief to marshalling yards as operating advantages. He foresaw further encouragement of the principle by the various railwaymen now with the National Coal Board. The same question was raised in the discussion on Mr. Hare's paper the previous day, when it was asked what inducements were offered to traders to adopt this practice. Mr. Hare considered that it justified itself in the trader's view by eliminating delays in marshalling yards, reducing quantities of stocks required to be kept in hand, and delivering raw materials in the order in which they are required. Mr. Sanderson described some special facilities offered to the iron and steel trade, such as "all-in" wagon standage schemes to enable different ores to be unloaded in order of preference, without penalty provided a reasonable overall rate of discharge is maintained.

* * * *

Overseas Railway Traffics

A further decline of ps. 111,145 in Central Argentine receipts for the week ended May 17 gave a loss for the fortnight under review of ps. 122,457. The Buenos Ayres Great Southern, also, recorded lower takings in the second week, the net result for the fortnight being ps. 205,000 behind the previous year. On the Buenos Ayres & Pacific and Buenos Ayres Western an improvement was shown in both weeks, amounting to gains of ps. 501,000 and ps. 149,000 respectively. Entre Rios results, which were ps. 35,600 behind the previous year in the week ended May 10, followed this with a reduction of ps. 55,000 in the next seven days. This company is still ps. 169,900 above the previous year on the aggregate. Some results for the week ended May 17 are tabulated below:—

	No. of week	Weekly traffic	Inc. or dec.	Aggregate traffic	Inc. or dec.
Buenos Ayres & Pacific*	46	2,550	+208	111,677	+6,314
Buenos Ayres Great Southern*...	46	3,190	−227	167,664	+2,791
Buenos Ayres Western*	46	1,392	+14	61,058	+5,596
Central Argentine*	46	3,022	−111	148,337	+3,007
		£	£	£	£
Canadian Pacific	19	1,494,250	+219,000	27,317,250	+1,353,500

* Traffic returns in thousands of pesos

Canadian Pacific takings recorded an increase of £382,000 in the two weeks ended May 14.

* * * *

Objects of The Engineering Centre

In our issue of April 18, reference was made to the establishment of The Engineering Centre as a permanent exhibition of engineering products, and to its proposed opening in Glasgow this summer. Further details of this project, with a review of the progress made to date, were given by the Managing Director, Mr. G. Gordon Jackson, in an address to the Publicity Club of Glasgow recently. One of the first responses the Centre had received, remarked Mr. Jackson, had been from one of the bigger firms offering to take 25 per cent. of all available space. That was something their plans had not allowed for, and it was not what they wanted. What they were aiming at, and what they were battling to get, was a large number of firms acting together for the benefit of engineering as a whole. For this reason they had decided to set a limit of £500 as the largest space value any firm could take, and what they really needed were 300 to 400 firms with an average outlay of £100, which would cover a continuous showroom display for a year. In this way there would be scope also for the small man.

* * * *

London Traffic Plan and Railway Delivery Services

The latest scheme for speeding up Central London traffic, details of which were given in our news pages last week, came into force on Tuesday last, and in the light of experience gained from its present application eventually may be extended to a number of City streets. The new regulations will have a considerable effect on railway collection-and-delivery services. Apart from the restrictions covering cars and taxis, which from Mondays to Fridays between 11.30 a.m. and 6.30 p.m. are not allowed to wait longer than is necessary to set down or pick up passengers, slow-moving traffic, which includes mechanically propelled vehicles of speed of less than eight miles an hour as well as horse-drawn traffic, is prohibited in those streets which were subject to this ban before the war; also, the loading and unloading of goods must be done where possible outside the restricted hours and within a period of 20 minutes. Before the war, when the London Traffic (Slow-Moving Traffic) Regulations, 1937, came into force, the result was a substantial increase in mechanisation of railway delivery vehicles, and in 1939, after the lifting of the ban as a war measure, railway horse-drawn traffic again increased.

* * * *

An Art Gallery on the New York Central

Before ordering its fleet of streamline coaches the New York Central asked its passengers for their ideas on travel comfort. More than a quarter of a million replies poured in, many of them putting forward practical ideas, with the result that adjustable lean-back seats, improved air conditioning, panoramic windows, and tastefully decorated interiors are now a common feature of the system. A railway journey may become tedious after a while, however, even though the last word in comfort has been reached, and so the New York Central has provided yet another distraction for its passengers. In a framed panel at the ends of each coach will be found a reproduction of a famous painting, which the passenger, sated with scenery and tired of reading or talking, can sit back and enjoy from his reclining seat, or he can pass from coach to coach admiring paintings the originals of which hang in the art galleries or private collections of a dozen countries. More than 400 reproductions of masterpieces, painted by modern artists as well as old masters of the American, British, Dutch, French, Flemish, Italian, and Spanish schools, are represented in this unique collection.

* * * *

Wagon-Building Developments at Ashford

The Railway Executive Committee recently gave authority to the Southern Railway to assist in alleviating the severe shortage of wagons by building 1,500 all-steel 16-ton wagons for the L.N.E.R. This continues the wartime arrangement under which, for example, the Southern Railway works at Brighton built locomotives to L.M.S.R. designs, for the L.N.E.R. In the post-war period the dearth of wagons has become more acute, largely because the railways, due to wartime commitments, could not undertake their normal programme of renewals; further, the present position is aggravated by shortages of materials and of manpower. The production of all-steel wagons had not been undertaken previously at Ashford and the adaptation to these new demands reflects credit on Mr. Bell, the Works Manager, and on his staff. Through the courtesy of Mr. O. V. Bulleid, Chief Mechanical Engineer, Southern Railway, we publish elsewhere in this issue an illustrated description of this notable constructional achievement. By judicious use of jigs and fixtures, the manpower required for this work was reduced considerably, and the production of wagons was hastened, so that an output of fifty-five wagons a week—one an hour—has been maintained.

Why Present Vesting Date is Impracticable

ON May 21 the House of Lords gave a second reading to the Transport Bill without a division, but although accepting its main principles, made it clear that the peers proposed to criticise its details during the Committee stage. A great responsibility rests on the House of Lords in this matter, as many clauses in the Bill were not discussed in the House of Commons, and, even if the principle of the Bill is admitted, many amendments are necessary to clarify its intentions and make it workable.

During the debate, Lord Swinton, Lord Portal, and other peers urged the Government to reconsider the vesting date which the Bill fixes as January 1, 1948. Lord Swinton pointed out that the country could not afford to risk a further breakdown in industry by a transport crisis next January, and as it is not possible to transfer staffs by a mere clause in a Bill, suggested that the British Transport Commission should be given the right to postpone the vesting date and continue the present arrangements until it had designed something better to replace them. Lord Portal underlined this point when he suggested that the Government did not appreciate the magnitude of the task to be carried out by the end of the year if the railways are to be vested in the Commission on January 1 next. As the railway companies will then cease to exist as separate entities except for the purpose of winding up, it will be necessary for new arrangements to be made to carry on functions now performed by the directors.

Although railway directors have been criticised frequently in Labour circles, Lord Portal and Lord Balfour of Burleigh gave some indication of the vital part they play in railway organisation. If the boards are to disappear, as suggested, he pointed out it is essential that alternative arrangements should be devised before the end of 1947 to ensure that their functions in regard to general control of the business, financial, and policy matters, day-to-day sanctioning of expenditure, letting contracts, sealing documents, payment of accounts, appointments of staff, salary increases, and so on, are delegated properly, and can be carried on.

Lord Portal also suggested that when the Commission was framing the schemes for the delegation of its functions to the various Executive bodies, practical difficulties immediately would arise. Thus, presumably, the railway companies' road cartage services and also their wholly-owned subsidiary road haulage companies will come under the control of the Road Executive. In that event, would the railway staff concerned cease to be treated as railwaymen and come under similar terms and conditions of employment as those applicable to staff engaged in road haulage undertakings? Similar questions arise in connection with railway staff now employed at docks and harbours, or in connection with canals, who will presumably be controlled in future by the Docks & Inland Waterways Executive. Other difficult points will arise in connection with the activities of the wholly-owned railway subsidiary companies, as their activities cover a very wide field.

Lord Portal asked whether the Commission intended to dispose of all such undertakings, or parts of undertakings, whose activities are not essential to the provision of a properly co-ordinated system of transport. In the case of Thos. Cook & Son, for instance, the railways gave the Government an undertaking when they acquired the business that they would not discriminate in their treatment of existing tourist agencies—whether railway owned or otherwise—and that any dispute would be referred to arbitration. Would the Government give a similar assurance to outside ticket agencies when it acquires the tourist businesses of Thos. Cook & Son and Dean & Dawsons?

He also referred to the numerous differences in conditions of service of railwaymen serving on the various lines and asked for information as to the conditions under which new entrants would be recruited. Although Lord Portal did not mention the point, difficulties may also arise in the case of the subsidiary companies in which the railway companies only have a partial interest, as some of these may well be engaged in activities which the British Transport Commission are precluded from performing.

Lord Walkden claimed, however, that the Bill was the foundation of a model scheme and that the Commission would be able to do many things to aid the community which the railways never would be able to do. After referring somewhat scornfully to the present size of railway rate books, he suggested that under the Bill rates would so be built up that by reference to a "little" book, any trader could easily find the cost of carriage and send his goods by rail, road, or water. He also suggested that the Treasury "will lend without stint" to the Commission and that bridges and tunnels would be widened, double-track lines made into quadruple tracks, new and better rolling stock built, and large electrification schemes undertaken. Those with any knowledge of Treasury control and the actual position in regard to the supply of materials for work of this kind, can only admire his facile optimism.

Several peers criticised the proposals for placing too extensive and largely undefined powers in the hands of the Minister of Transport, and, in particular, the proposal that he, and not the British Transport Commission, should appoint the members of the various Executive bodies which are to carry out the policy laid down by the Commission and be responsible for the day-to-day management of the various forms of transport. Lord Balfour of Burleigh in a trenchant speech described the Bill as a tragedy because it would not produce an efficient transport service, and would bar the way against there ever being as efficient a transport service as there should be. He claimed that the appointment of separate Executives for each form of transport would prevent co-ordination, and suggested that the substitution of ownership for the control of the various forms of transport was harmful because it eliminated the most important ingredient of an efficient system—that of competition. He also criticised the far-reaching powers given to the Minister under the Bill.

A number of peers criticised the absence of any indication of the policy it is proposed to adopt in regard to the fixation of rates and charges. Lord Lucas suggested that one of the biggest problems of the Commission would be the working out of competitive rates to be offered to the "C" licence operator. Lord Long strongly urged that the operation of the Bill should be deferred to a later date, as the country is under the shadow of even greater financial and economic difficulties. Lord Addison agreed that it would take a very considerable time to get the Commission going and reap all the advantages, but claimed that this was an argument for pushing ahead with the Bill rather than deferring it. The Bill was then read a Second Time and passed to a committee of the whole House of Lords, during whose deliberations a large number of amendments will be considered.

* * * *

Railway Hotels

DURING the debate on the Transport Bill the Minister of Transport remarked that "railway hotels are first class for first class passengers, but there are no railway hotels to cater for the vast majority of persons using the railways," and subsequent speakers urged that hotel accommodation should be provided by the railways for persons of modest means. The Parliamentary Private Secretary to the Minister of Transport returned to this theme in a speech at Exeter on May 17, and alleged that third class travellers could not secure hotel accommodation and had to be content with "some hole in the corner, a tea room, or some dingy waiting room." For this reason, it was the Government's intention to provide good hotel accommodation for the masses within the range of their purses. He admitted it would be some time before the Government could provide better railway hotel accommodation for the man in the street, but, although there were building difficulties, it would waste no time.

The railways are already the largest hotel owners in the country, and the statement that the proposed British Transport Commission will undertake the construction of a great chain of hotels for use by the masses betrays, we suggest, a misapprehension of the actual position. Practically the whole of the country's population makes train journeys occasionally, but, quite obviously, the vast majority of people using the railways do not normally stay in hotels.

Railway hotels are of two distinct types; business hotels, which in a number of large provincial towns form a social centre in addition to providing accommodation for travellers, and hotels at country or seaside resorts which cater almost

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entirely for holiday makers. It does not necessarily follow that only first class passengers stay at railway hotels, as passengers choose to pay the higher fare for first class travel for a variety of reasons. Many guests at railway hotels travel third class and many others arrive by car, and the railways have no power to discriminate between them. Further, compared with the recognised "luxury" hotels, the charges at railway hotels, particularly their business hotels, are very moderate, as is proved by the demand for accommodation.

The statement that the Government intends to provide good hotel accommodation for the masses within the range of their purses also overlooks the fact that railway companies primarily are transport organisations, and that the provision of hotel accommodation hitherto has been only an ancilliary business. We do not know on what authority the Parliamentary Private Secretary is in a position to make this statement, as the Transport Bill has not yet passed the House of Lords and the British Transport Commission is not yet established. We would point out, however, that in the unlikely event of such a sweeping statement being true, there is no likelihood of such hotels being built for something like five years at least. Further, if the Commission does embark on such a project, many problems will arise if the proposed hotels are to be economic, and the position at once will arise of a State-owned organisation competing with private enterprise.

The railways, like other organisations, recognised before the war that, with the growth of the "holidays with pay" principle in industry, there was likely to be an increased demand for accommodation at prices below the usual hotel level. Several years ago they offered to co-operate with the Government in the provision of such accommodation, without result. They were, and are, however, co-operating actively with the various organisations which are establishing holiday camps, by providing transport and other amenities, and these camps are steadily increasing in number. But for the shortage of labour and materials there would doubtless have been a much larger increase. The accommodation and charges at these camps are generally below the hotel level, although the amenities provided are much greater, but as there have been recent Press criticisms of the level of the charges, we shall await with considerable interest any action which the Government or the Transport Commission may take in the direction of providing hotels for the masses.

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Analysis of U.S.A. Railway Operations

DURING the 1914-18 war, the American Government brought railways under the control of the United States Railroad Administration. Much of the work done by that body has been criticised adversely and stress has been laid on the higher level of performance reached throughout the second world war when the lines were managed by the owning companies, subject to the guidance of the office of Defence Transportation. One accomplishment of the Railroad Administration, however, will stand to its credit for all time. That is the institution of a standardised system of operating statistics. Month by month railway officers were supplied with full details of the working of their own properties and also of other properties for purposes of comparison. After the emergency passed, this statistical machinery was taken over by the Interstate Commerce Commission, which had a uniform accounting procedure already in force. Modified by the Commission to meet changing conditions, the accounting and statistical apparatus can be used to analyse the operating results of the railways as a whole, and the performance of individual lines, with reasonable accuracy and remarkable celerity. Methods of interpreting the data are elucidated in an excellent manual entitled "Analysis of Railroad Operations"* by Mr. Joseph L. White, Executive Officer, Office of Defence Transportation.

In the first world war, Mr. White was Statistician to the Director General of Railroads and had the advantage of working with Professor William J. Cunningham, who was freed by Harvard University to act as Assistant Director of Operation in the Railroad Administration. One happy result of this transmutation of an academic personage into a railway executive was the publication in November, 1919, of an article explaining how the new statistics were planned and emphasising that the greatest measure of value of the figures came from local rather than from central use. Professor Cunningham's paper is a classic in its own field and Mr. White has been wise to reproduce it in an appendix to his own discourse. The forms of return adopted in 1918 constitute the basis of the annual statements issued by the Bureau of Railway Economics, Association of American Railroads. One great merit of the existing arrangements is the speed at which the statistics are circulated. Full details of operating results for all the American Class I railways were in London on April 22, eleven days after particulars of the revenues and expenses of these railways reached this country. We know much more about the activities of the 132 large American railways than we do about the four British main lines!

The aim of Mr. White's book is to instruct railwaymen and students of transport how to handle the vast fund of information available to all and sundry in the United States. As a side issue, his pages are designed to give railway accountants an idea of the operating man's point of view and of the utility of the figures to him. In 29 tables the essential figures are set out and commented on in straightforward language. Perhaps the most effective chapter in the whole book is the last, which presents comparative analysis of the operating results on two railways, one a steam line with a heavy freight traffic and the other earning a large passenger revenue, partly on an electrified section.

As a makeweight to the discussion of many serious subjects, such as unit costs and statistics of use of equipment, Mr. White appends a pictorial summary of railway revenues and the causes of expenses as recorded in the accounts. No fault can be found with the illustrations, but the text is in parts too simple for the reader who is able to follow the niceties of expense to revenue ratios or to understand Professor Cunningham's insistence on the importance of the time element in operating statistics. This criticism does not detract in any way from the value of Mr. White's treatise as a practical guide alike for railwaymen and for students of transport, who are interested in the array of significant averages, ratios, and unit costs required to measure railway operating efficiency.

* Simmons-Boardman Publishing Company, 30, Church Street, New York. Price $5

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In Situ Ballast Cleaning

ON the Illinois Central Railroad of the United States the stone ballast used is mainly crushed limestone, which suffers more disintegration through abrasion than some of the harder stones. Also, large areas served by the railway are agricultural, and wind-blown dirt from these highly-developed lands deposits itself on the ballast, causing further accumulations of solid matter which are impervious to drainage. In addition, there is coal-dust leakage through the floors of hopper cars, on routes carrying heavy coal traffic. An investigation by the University of Illinois of samples of dirt removed from ballast on the Illinois Central system showed it to consist of 41 per cent. limestone dust, 45 per cent. soil from adjacent fields, and 11 per cent. coal dust; the remaining 3 per cent. was moisture. In the vicinity of stations and marshalling yards, and on rising grades, there are additional causes of fouling, such as sand. Contributory causes of foul ballast are inadequate surface and sub-surface drainage, excessive expansion spaces between rails, battered rail-ends and badly-packed joints, which result in abnormal movement under traffic; and flats on wheels, which have a similar effect. Vegetation tends to grow in the dirt-filled interstices between the stone, with further lowering of the ballast efficiency. More than ever previously, therefore, systematic ballast cleaning has become a necessity.

A limited amount of cleaning has been done by forking, or by the use of ballast screens, but in the matter of labour this has been so costly that ultimately it has been found more economical to throw away the old ballast to a certain depth below the sleepers, and to replace it with fresh. By 1922, however, several different types of machine for screening ballast had been brought into use. One, introduced on the St. Louis Division in 1923, consisted of a revolving screen, a feeder trough, a cleaned ballast distributor, and a dirt conveyor, all arranged on a steel frame with wheels for travelling over the line, and with a petrol power unit for working the

screen. A crew of 18 men, 12 shovelling ballast into the feeder trough, was needed to operate this plant, but the loss of time of so large a gang, when it was necessary to suspend operations to clear the trains, made it uneconomical, and the plant was not used after the first season. Then came the depression, and in the retrenchment of the next decade, ballast cleaning was deferred, so that the arrears to be overtaken are now unusually large.

Hand screening is no longer justifiable, except on a very small scale, because of the efficient ballast screening machines now available. Other machines are available for some degree of ballast improvement, such as scarifiers and road graders, which cut the ballast away from the ends of the sleepers, but do not clean it; the scarifier lowers the mud level by stirring up the ballast, leaving it looking clean, but actually the dirt has settled down to a lower level, where it is just as objectionable.

In 1942 the Illinois Central engineering department decided to attack the drainage problem more thoroughly, and after investigating various types of machines, purchased two McWilliams "Moles," specially designed for such work. These usually operate in pairs, one in the inter-track space, and the other in the outside shoulder of the ballast, and each can move from 700 to 1,200 lin. ft. of ballast in a working day. Two digging arms, at the front end, feed the dirty ballast to a conveyor belt, which carries it to a ballast screen. Here the dirt drops through the screen on to a lateral conveyor which carries it clear of the ballast, and on to the shoulder of the formation.

The clean ballast is passed backwards by the conveyor belt to the space from which it was dug. These moles can clean to depths of from 8 to 16 in. below the undersides of the sleepers. They are powered by petrol engines, and move along racks which are laid in sections on the sleeper ends, to keep the machine running in a true line. When normally set, they lie clear of passing trains, and so cause no interference with traffic.

As considerably increased cleaning capacity was needed to cope with dirty ballast conditions, the Illinois Central, after further investigation, made a contract with the Speno Railroad Ballast Cleaning Co. Inc. for service with its ballast cleaning machine and its trained personnel unit, which first came into successful operation about 1929. This is a much more elaborate equipment, mounted on a long flat wagon, and consists of a twin arrangement of scoops, belt conveyors, vibrating screens, ballast chutes, and scrapers, one set on each side of the wagon, together with a swing conveyor for disposing of the dirt. When it is in the cleaning position, the machine moves along the track at an average speed of approximately 1 m.p.h.

Complete possession is required of the track in course of cleaning, but trains are permitted to pass on adjacent tracks at reduced speed. The ballast is picked up by scoops, which are lowered into it by power screws. Each scoop is essentially a box 24 in. wide, with two sides and an inclined bottom, but no top or ends, and can be lowered to any desired depth up to a maximum of 2 ft. 5 in. below rail level. The usual depth is from 8 to 10 in. below the underside of the sleepers. Each scoop is equipped with a conveyor belt which carries the dirty ballast to elevating conveyors, and these in their turn deliver it to vibrating screens. The clean ballast can be passed back between the rails, or passed out on to the ballast shoulder as desired.

The dirt from the screens is delivered to an 18-in. belt conveyor supported by a 23-ft. boom, pivoted under a dirt hopper, and the boom can be swung out on either side of the wagon; it is long enough to throw the dirt across an intervening track to the outer shoulder of the formation. Ballast not picked up by the scoop, close to the sleepers, is cut away by a manually-controlled tool, and requires a second trip of the machine for cleaning purposes; two passes or cuts are thus always made, and occasionally three or four if the ballast is particularly dirty. Power for movement is provided by a locomotive, and in normal practice 2 hr. is needed thoroughly to clean a mile of ballast.

The machines described clean the ballast only in the shoulders and in the space between tracks, and in the course of time, no doubt, dirt from the ballast in the four-foot may wash down and foul the shoulder ballast again. This may shorten the intervals between ballast clearing, but on the ground of expedition and minimum interference both with traffic and the ballast bed, this method is preferred to a complete stripping of the track for ballast cleaning purposes, and it is also of maximum value in assisting the drainage of surface water away to both sides of the track. The intervals between ballast cleanings vary from two to eight years.

* * * *

Shunting Locomotives for Steel Works

MR. E. L. DIAMOND, whose name is well known to readers of *The Railway Gazette*, and who recently joined the Plant Engineering Division of the British Iron & Steel Research Association, has produced, in connection with a conference held with the Ministry of Fuel & Power in October last, a valuable survey of the various types of motive power used for shunting in iron and steel works in this country. This much-neglected subject has assumed particular importance under present conditions, and Mr. Diamond points out that new and improved locomotives hardly can be expected to appear unless builders can count on the types being standardised for construction in large numbers. The present time is opportune, therefore, to consider what types of locomotive would show to greatest advantage.

Unless one is familiar with working and track conditions in a steel works, it is difficult to realise their severity. Mr. Diamond gives a timely warning that there is a great difference between steel works sidings and railway shunting yards. Curves of 90 ft. average radius limit the rigid wheelbase to about 10 ft., and the overall length to about 24 ft. or less, so that only small locomotives can be used. Gradients of 1 in 30 or even steeper are common, and the only limit to loads is the maximum that the engine can haul. The condition of the track is generally poor, and it frequently happens that scrap metal falls from the mobile charging pans on to the track, where it is run over and, as Mr. Diamond puts it, gets "into the entrails of the locomotive." Heavy ingot cars and ladle cars are among the most difficult items of rolling stock handled; frequently it is possible to start them only by shock, and their bearings often seize up through slag flowing on to them. The heat of the molten metal, too, is transferred soon to the bearings, and practically ruins attempts at lubrication.

For these highly unattractive duties, steam locomotives are used almost exclusively, and it can be argued convincingly that the steam locomotive is the machine *par excellence* for this work. The reciprocating steam engine is unsurpassed in its capacity for working under arduous conditions with gross overloads and little maintenance, and for continuing to function uncomplainingly until it practically drops to bits, long after any other form of motive power would have given up. These are admittedly the most desirable qualities, in the circumstances, and were it not for the low thermal efficiency of the steam locomotive, it would be unnecessary probably to look for an alternative.

Unfortunately, other factors have to be considered. The steel works locomotive inevitably must be worked wastefully. It works normally at full regulator, and though expansive working is possible, it is hardly ever attempted. The average hourly fuel consumption about 2 cwt. A further disadvantage is that some time necessarily must be spent in oiling, coaling, and watering. Mr. Diamond's paper suggests that little advantage would be gained by adopting fireless locomotives, but this may be questioned, as very illuminating observations on the excellent results obtained with them appeared in the November 8, 1946, issue of our contemporary *Engineering*.

Electric traction would appear to have some economic advantages as electric power normally is available in steel works. Distribution is a difficulty here: it might be possible to adopt some form of shielded conductor rail, as in some Continental applications, to avoid the obvious drawbacks of the two conductor methods already familiar in this country. Diesel traction would offer little inducement to its use under existing conditions. A rigorous system of skilled maintenance would be needed, and train staff would have to be allowed time to undertake it. It might be feasible, however, if the rougher duties in the works—the transport of iron ore, hot metal, slag, and ingots—could be undertaken by conveyors and eliminated thereby from wheeled traffic. The remainder of the rail traffic would be then of an easier nature, and the higher thermal efficiency of the diesel would be realised more effectively.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Railway Expressions

5, Chudleigh Road,
Harrogate. May 20

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Reading in a recent number of *The Railway Gazette* about the incidence in the Oxford Dictionary of the word "timeous" from a railway notice, I was reminded of a porter at Harrogate who used to tell enquirers that the London train was usually "punctuous."

Yours faithfully,
E. M. BYWELL

A Journey Across Australia

Melbourne. May 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Where, in 1947, can you travel over 3,300 miles, without being asked to show a passport, produce your money, fill up forms, and go through the Customs—in other words, travel "without let or hindrance"? Brisbane to Perth by rail is 3,307 miles: I did that journey in 1926, and I have just done it again: the freedom from every form of formalities seemed as strange as it was a delightful relief. Until you have experienced it, you cannot appreciate the joy of being able to travel such a mileage, unfettered by formalities, in this rule-riddled world.

The Australian railways have not been, and certainly are not now, devoid of enterprise, but, in common with the British railways, it is going to take them some time to get back to, and improve on, their pre-war standards; the railways throughout Australia had a very busy war.

The scheme for the unification of all Interstate gauges is not yet approved (not for lack of perseverance to that end), and even when approved will take some years to fulfil. When accomplished it will cut considerably the overall time of the journey and dispense with the irritating five changes which passengers now have to undergo.

At present, the main leg of the journey is from Port Pirie to Kalgoorlie, a distance of some 1,100 miles, operated by the Commonwealth Railways. At Pirie, a very old Canadian National Railways engine, imported during the war, was assigned to haul us to Port Augusta. At Port Augusta we swopped that relic for one of the new C.R. semi-streamline Queensland-built 4-6-0 engines, which looked very smart. These locomotives have 12-wheel tenders, longer than themselves, carrying 12,000 gal. of water and 17 tons of coal, but when it is realised that they are allotted the task of taking the train right through to Kalgoorlie, 1,051 miles, the size of these tenders becomes less surprising. I am not knowledgeable about locomotive performance, but I should imagine this long run constitutes a record for steam traction. The crew is changed no less than ten times during the run, which lasts from 7.22 p.m. on a Wednesday until 11.15 a.m. the next Friday. We arrived at Kalgoorlie dead on time.

This line was used most extensively during the war, and the track has never recovered from the wear and tear caused by war traffic. If it were properly repaired there could be a substantial curtailment of the present running time. The route lies through very isolated country—there is not a permanent stream anywhere on it—and it seemed to me that as Australian labour would detest the work, the answer is to import an adequate number of Japanese prisoners for the job. I don't think the Australian worker would object to the importation of this labour, provided he was given adequate assurance that it would leave the country as soon as the job was done. I believe he would be quite capable of appreciating the real advantage to his country of getting this track back to good order.

The rolling stock, which I suspect was running more than 20 years ago, has been well maintained, and the passing of the years has not impaired its comfort. The service was good. The meals were good, too, and, so far as I know, it is the only train on which meals are included in the price of the ticket. It is a journey well worth making, not for any scenic grandeur, but because it gives you a vivid impression of what is meant by "wide open spaces," and because it offers a fascination found only in a sparsely inhabited region.

The maintenance of an operational staff along this barren route must be a constant problem, and, to make conditions as tolerable as possible, the Commonwealth Railways have their own Stores Department and run a weekly train, aptly called the "Tea and Sugar" train, from which their employees along the route draw their generous rations.

The Trans-Continental as it is called—and in my opinion it deserves a more romantic title than that—runs three times a week, and, despite air competition, seldom leaves with a vacant berth. Let no one reject the opportunity, should it come their way, of travelling on this train.

Yours faithfully,
C. M. SQUAREY,
Overseas Traffic Manager
Thos. Cook & Son Ltd.

Railways and Public Complaints

13, North Gardner Street,
Glasgow, W.2. May 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—It would be interesting to know what sort of complaints Mr. G. R. Mitchison, Labour M.P. for Kettering, has had to make to one of the large railway companies and how he went about it. Mr. G. E. Orton, Chief Officer for Public Relations, in his letter published in the May 16 issue of *The Railway Gazette*, outlined briefly the procedure followed by the G.W.R., and I imagine that the system must be similar in the other railway companies.

My experience with queries and complaints over the past few months may be of interest, and I will be as brief as possible in relating them. They all concerned the L.N.E.R.

One dark night I observed a goods train on the West Highland line the engine of which was carrying no illuminated headlamp code. I wrote to the L.N.E.R. asking certain questions about this. The official to whom I wrote called to see me and, as I was not at home, contacted me by telephone and answered all my questions.

On a foggy evening a train from Glasgow arrived at Thornton Junction some forty minutes late and the connection for the coast had left, which meant a long wait in an unpleasant spot. I wrote to the L.N.E.R. at Glasgow and asked what happened to the passengers for Crail (that being the last train, the next going only to Anstruther) and why that connection was not always held, as, presumably, the rolling stock was not required again that night. Within four days I received a note stating that my letter had been passed to the District Goods & Passenger Manager at Dundee. Within a week I received a full explanation from this official. He explained why the train from Glasgow was late; pointed out that the connection for the coast collected passengers from several other trains over a short period of time, and that it would not be fair to them to hold the connection unduly long; mentioned that if there were any passengers for Crail the following train would take them there instead of stopping at Anstruther; and, finally, he pointed out that the engine (but not the rolling stock) was required again that evening to pick up fish vans along the coast for delivery to Thornton Junction to connect with the Aberdeen-London Fish Express. A well written and courteous letter.

The other complaint concerned third class ticket holders travelling in first class compartments and the consequent overcrowding. This letter was addressed to the L.N.E.R. in Edinburgh. Within three days I received a reply from the Passenger Manager, who said he would inquire into the matter and would communicate with me again. Just over two weeks later I received another letter from him telling me that a special check was being made of passengers' tickets and that extra accommodation was being provided on that particular train. Actually, they put on three extra coaches, which included some first class compartments, and travelling has been a lot easier on that train—moreover, it is comparatively rare now to find third class ticket holders in first class compartments on that line.

Those three instances will suffice to show that the L.N.E.R. deal well and fairly with reasonable queries and complaints.

Yours faithfully,
G. RICHARD PARKES

RAILWAY WAGE CLAIMS.—Representatives of the three railway trade unions on Tuesday last spent three hours with Mr. George Isaacs, Minister of Labour, and Mr. Alfred Barnes, Minister of Transport, discussing at the Ministry of Labour the deadlock which had arisen in their wage and conditions claims on the railway companies. An official statement said the unions' representatives put before the two Ministers the situation that had been reached in their negotiations with the railway companies and the matter was fully discussed. The Ministers promised to give careful consideration to the representations that had been made to them. The chief claim by the unions is for an all-round increase of £1 a week, and reductions in hours of work are also sought. The meeting with the Ministers followed discussions with representatives of the railways.

The Scrap Heap

STATE "COOK'S"

Thomas Cook & Son, the tourist agents, may be nationalised—if the State Railway Commission thinks it worth while, said Lord Addison, for the Government, in the House of Lords. Sir Samuel Beale, a director of Cook's commented: "We are not surprised. If the Government buy the railways they buy Cook's as well."—*From "The Evening News."*

* * *

SOUTHEND-ON-SEA GOES DRY

A breakdown in an electrical installation at Shoeburyness resulted in a shortage of water for locomotives hauling trains to Southend and London on Bank Holiday night. At one time nearly 20 trains were held up between Shoeburyness and Southend East. Crowds waiting at Southend to return to London, went back to shelters on the seafront to await the resumption of service, which took place at 1.30 a.m. Trains continued running until 2 a.m. to clear the crowds, and 2,000 passengers were sent to the L.N.E.R. station at Southend, where a special train manned by a volunteer crew was put on to take them to Liverpool Street.

* * *

WHERE HAS £198 MILLION GONE?

Prophecies are made that fares and freights on the railways are to be further increased. This is no party matter. All M.P.s. know that dearer fares and freights put up the costs of all production.

The justification will be that the railways, now on lease to the Government, are losing money, and that fares and freights must be brought to a level where the railways can show a profit before they are nationalised.

It is a false argument. When the Government took over the railways on lease in 1940, there were loud protests from the Socialists that the country was being bled by the railway stockholders. Yet, in fact, the Government made a very shrewd bargain. Its profits on the deal were £198,000,000.

A private company would have saved for the lean years. It would have recognised that a crude raising of the price to pay dividends in bad times was the surest way to reduce custom, reduce efficiency, and run the business down.

So what has happened to the profits? What has happened to the £198,000,000? Why should not some of the money be used to assist Britain's economic recovery? —*From the "Daily Express."*

* * *

THE VITAL TICKET

A story of episcopal difficulty is told of the late Bishop of Exeter, Lord William Cecil. The Bishop, a member of the family of Hatfield Cecils, was famed for his absent-mindedness.

One day, he was discovered by the ticket inspector of a West of England train searching frantically through an otherwise empty compartment. Asked what was the matter, he explained anxiously, that he had lost his ticket. "Oh, that's all right, my Lord," said the inspector reassuringly. "We know you well enough." "But that's not the point," said the Bishop gloomily. "Without the ticket I shall miss an engagement. I can't remember where I'm going."—*From "The Yorkshire Post."*

* * *

REGULAR-INTERVAL SERVICE

When the midday train from Kings Cross to Scotland was restored after the war, there was not time to publicise it in the usual way through timetables and announcements. Sir Charles Newton, Chief General Manager of the L.N.E.R., told the Railway Students' Association at its recent Darlington convention that on the first day the train ran, he went to the departure platform to see how well it was patronised. Finding it very full, he inquired of a woman passenger how she knew the train was running. "Oh," she said, "I just came to Kings Cross and asked for the first train to Scotland, and they said here it was."

* * *

Transport Bill in the Lords

In the case of the South Sea Bubble, the public was invited to subscribe on account of a scheme "hereafter to be revealed." History related that both the promoters and the investors came to a sticky end. Surely the [Transport] Bill was another case of the unfortunate public being invited to a scheme "hereafter to be revealed."—*Lord Swinton, during the debate on the Second Reading.*

I cannot understand noble Lords asking "Where is the plan?" This is a clear plan they have before them. There is to be the Commission and then the five Executives carrying on the day-to-day business entirely free from interference by politicians.—(Laughter). Only the Minister will be there.—(Renewed laughter).—*Lord Walkden.*

"It has indeed been a great privilege to have seen the inner workings of a great railway company, particularly during the strenuous days of the war, and nothing has struck me more than to note the wonderfully good comradeship which exists throughout the railway service from top to bottom. I would say that I would relinquish my seat on the board of the railway company with which I am connected, and, in particular, I would relinquish that prized possession my railway pass, without regret if I felt that the interests of the service and of the country would thereby be promoted. . . . The tragedy of this Bill is not only that it will not produce an efficient transport service but that it will bar the way against there ever being as efficient a transport service in this country as there should be."—*Lord Balfour of Burleigh.*

The railways gave 100,000 men to the Services, and yet they were able to carry on. They gave locomotives and rolling stock, which were badly needed in this country, to meet the still greater demand from overseas, and yet they carried on. The tracks were blitzed night after night, and day after day the engineering gang got down to it and maintained those tracks and kept the precious trains running. How can it possibly be said that a system like that was inefficient when handed over to the Railway Executive? If ever we had an example of a really efficient organisation, judged by the severe test to which it was put during the war, it was the railway organisation. We must admit that in 1939 the railway organisation was a highly efficient one.—*Viscount Falmouth.*

100 YEARS AGO

From THE RAILWAY TIMES, *May* 29, 1847

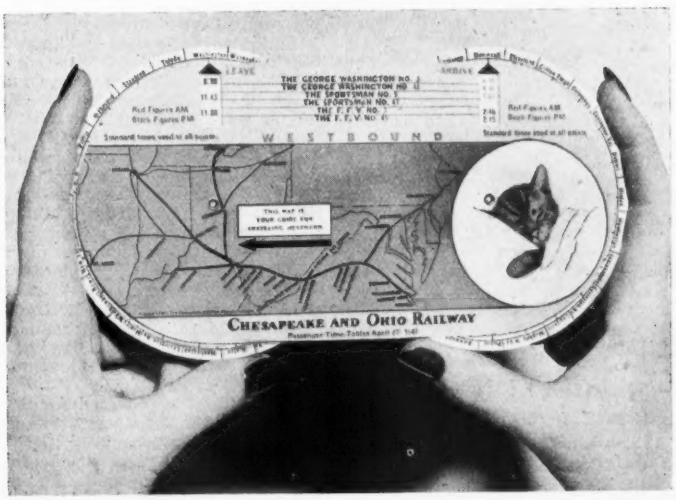
LONDON and NORTH-WESTERN RAILWAY COMPANY.—NOTICE of SECOND CALL on London and Birmingham £25 Shares, created in August, 1843.—NOTICE is hereby given, that the Directors, in execution of the Acts of Parliament relating to the said Company, have, pursuant to the provisions thereof, made a CALL of £5 in respect of each of the £25 shares which were created in August 1843, and have ordered that such call be paid to one of the undermentioned bankers, namely—

London—Messrs. Glyn, Hallifax, and Co.;
Birmingham—The Birmingham Banking Company, or Messrs. Moilliet and Son;
Liverpool—Messrs. Moss and Co., or the Bank of Liverpool;
Manchester—Sir Benjamin Heywood and Co., or the Manchester and Salford Bank;

on or before the 1st July next; and the several proprietors of such £25 shares are required to pay such call accordingly.

GEO. CARR GLYN, Chairman.
CHAS. LAWRENCE, Deputy-Chairmn.
By order,
RICHD. CREED, HENRY BOOTH, } Secretaries.
Euston-station, London, May 18, 1847.

Temper Saving "At a Glance" Timetable



Using this calculator, the traveller on the Chesapeake & Ohio Railway, with two flicks of a finger, can dial in a couple of seconds the departure time, name of train, and arrival time

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

WESTERN AUSTRALIA

Midland Railway Road Coaches

As the first step in modernising its road passenger transport services, the Midland Railway introduced an A.E.C. Regal coach to inaugurate the 313-mile route between Perth and Geraldton on November 26 last year. The vehicle, with a body built by Campbell & Maunix, Perth, accommodates 26 passengers in aeroplane-type seats. A special feature is the room provided for personal luggage.

Leaving Perth and Geraldton on alternate days at 7 a.m., the coach reaches its destination at 6.20 p.m., stopping *en route* for appropriate rest periods, and to pick up and set down passengers. After its first 9,000 miles of operation, it was reported to be "running like a wrist watch." It will be joined in due course by a number of Regal Mark III coaches.

Long-Distance Coaches for Western Australia

A.E.C. vehicle operated by the Midland Railway of Western Australia on the 313-mile Perth—Geraldton route

VICTORIA

Ash Disposal at Power Station

Though the installation of the new pulverised fuel boilers at the Victorian Railways Newport Power Station (which is located less than 10 miles from Melbourne), considerably reduced the cost of producing energy and enabled inferior types of coal to be used, it created also the problem of disposing of the fine pulverised fuel ash gathered by the precipitators, which in full operation collect 98 per cent. of the dust from the burnt fuel. This problem was accentuated by the abnormally poor quality of coal supplied to the department during the past three or four years, some of the coal having an ash content approximating to 23 per cent.

After various methods of disposal had proved themselves either unsatisfactory or costly, arrangements were made with the Melbourne Harbour Trust and the local municipal authorities to deposit the ash for a limited period in a nearby shallow bay. This bay was serving no useful purpose. It was unsuitable as a swimming pool because it had a soft muddy bottom, and was shallow some distance from the shore. In the scheme now operating, a wall has been built across a portion of the bay, and the enclosed space has been subdivided by retaining walls. The whole of the ash from the new plant is being carried in a wet state into this enclosure by means of piping. Dust troubles are minimised, and, since the ash is composed mainly of minerals, with the addition of a small percentage of carbon, it is quite inert, so that no smell or other offence is created.

Bulk Oil Purchase for Economy

Since the shortage of coal compelled the Victorian Railways to use oil as a supplementary fuel for locomotives, the problem of reducing the cost of the oil, which is considerably greater than that of coal, has been the constant concern of the department. Investigation showed that one way to secure a substantial saving was to purchase the oil in bulk in tanker lots, and hold it in storage tanks equipped with pumping plant and pipelines.

The purchase of three concrete tanks, each of 6,000 tons capacity, has now been completed. These tanks will feed the existing 90,000-gal. (360-ton) storage tank at Newport (Melbourne), whence oil is distributed to nine railway workshops and locomotive depots in city and country areas in Victoria.

The quantity of fuel oil now being used amounts to approximately 1,300 tons a week, but with the conversion of additional engines, bringing the total of oil-burners to 82, and with the expected increase in other directions, the total weekly consumption will reach approximately 1,550 tons. It is anticipated that, with the new method of purchasing fuel oil, the cost of the installation at Newport will be saved in the first year.

CEYLON

Locomotive Shortage Cuts Mileage

As a result of continued shortage of motive power, a 6 per cent. cut in the total daily train-mileage on the Ceylon Government Railway became effective on April 21. Prospects of replacing old locomotives still seem remote, and orders for new engines placed some time ago with manufacturers in the United Kingdom have not yet been fulfilled. It appears that until the demands of countries such as Malaya and Burma, which were devastated by the war, have been met, Ceylon will have to wait for new motive power. There is also a shortage of material for repairs, and it is necessary to use parts from worn-out locomotives to keep those which are in better condition in service.

Some relief is expected by the arrival in September this year of diesel railcars ordered from Great Britain. It is expected that these will be shipped in batches, instead of waiting until the complete order of 23 vehicles is completed. There is no news yet as to when the railway will receive the eight 6-coach diesel trains now on order.

Card Sharpers on Trains

A new problem for the Railway Security Service is the prevalence on certain trains of gangs of card sharpers, who combine their usual activities with the theft of their victims' luggage. Under the present Railway Ordinance, playing cards on trains is not an offence, but it is proposed to introduce an amendment to make gambling on trains illegal.

INDIA

India-Iraq Link Proposed

The construction of a direct railway route between India and Iraq, *via* Iran, is under consideration by the governments of the two countries. This announcement was made by Dr. Asghar Ali Hikmat, leader of the Iranian delegation to the Inter-Asian Conference.

Protection Squad for Trains

A special force of 1,500 men is being raised by the United Provinces Government to ensure safety of travel on trains in the province. It is proposed to despatch armed guards with trains on the E.I.R., G.I.P.R., and O.T.R., for the protection of passengers and mails.

An attempt has been made to blow up a portion of the track of the Bannu-Lakki section of the North Western Railway, near Ghoriwala Station. The track was damaged slightly.

Standing Finance Committee

The Standing Finance Committee for Railways met under the chairmanship of Dr. John Matthai, Member for Transport & Railways, on April 15 and approved the following proposals:—

(1) Construction of a line from Barwadih to Sarnadih (40 miles), estimated to cost about £1,280,000, as part of the Barwadih-Chirimiri project (158 miles). The completed undertaking will facilitate the distribution of coal from the Bihar fields to the West of India; afford relief to the overloaded Barkakana loop (E.I.R.); and open up several promising coal areas.

(2) The purchase of 150 heavy goods broad-gauge locomotives and 33 heavy goods metre-gauge locomotives from North America to meet the requirements of the year 1948-49, including the movement of extra coal the Government is planning to raise.

Orders have been placed for 36 spare boilers from North America to speed up the periodical overhaul of the broad-gauge and metre-gauge locomotives already obtained from there for wartime traffic. Also, 650 broad-gauge tank wagons and 330 metre-gauge tank wagons have been ordered.

The committee was informed also of the latest position of gross earnings and work-

ing expenses. The total approximate gross earnings of all budget lines for the year to date amount to about £151 million, which is about £13 million less than the estimated gross earnings, and about £19 million less than the actual gross earnings for the previous year. Total ordinary expenses of budget lines up to January 31, including suspense but excluding appropriation to and from the depreciation reserve fund, amounted to about £85 million, which was some £9 million more than totals for the corresponding period of the previous year.

SOUTH AFRICA

Working of Rhodesia Railways

Mr. F. C. Sturrock, Minister of Transport, has stated that the Union Government has informed the Government of Southern Rhodesia that it would like Rhodesia to take over from the South African Railways the working of the main line from the Union border to Bulawayo. He added, however, that probably it would take some years before this could be done, as Southern Rhodesia would have to buy additional locomotives and other rolling stock to enable it to handle the traffic.

Mr. Sturrock recently had preliminary discussions in Cape Town with Mr. G. A. Davenport, Minister of Mines & Public Works in Southern Rhodesia, on suggested changes in the long-standing working agreements between the South African Railways and the Rhodesia Railways. It is felt that these agreements are in need of revision in many respects.

Co-ordination of Transport Boards

Proposals which are now being considered envisage the creation of a transport body in the Union to co-ordinate the policies and activities of the independent statutory and regulatory boards controlling road, air, and sea transport. To accomplish this, legislation will be necessary, and it is improbable that the plans, if approved, could be implemented this session.

The Government has felt for a long time the need for co-ordinating the activities of the boards which function within the framework of the Department of Transport. It is possible that the Public Service Inquiry Commission will make recommendations to this end in its sixth report, which has just been completed.

UNITED STATES

Portable Radio Sets for Hire

Passengers in Pullman cars on the "Sunshine Special" and "Southerner" expresses of the Texas & Pacific between Fort Worth and El Paso are able to hire portable radio receivers for a small rental. Should the new service prove popular, it is proposed to extend it to the company's trains operating east of Fort Worth.

New Haven Fares Increased

The Interstate Commerce Commission recently granted the New York, New Haven & Hartford Railroad authority to increase its basic one-way coach fare from 2·2 to 2·5 cents a mile, and its parlour- and sleeping-car fares from 3·3 to 3·5 cents a mile, with a minimum fare of 15 cents.

A similar petition filed subsequently by other Eastern railways is still pending before the commission, as recorded in *The Railway Gazette* of April 25. Season tickets are not affected by the increase in fares.

In granting the increases the I.C.C. held they were moderate when compared with increases in costs since the pre-war years. Thus, it said coach fares would be about 25 per cent. higher and Pullman fares 16·7 per cent. higher than the fares prescribed by the commission in 1936, while the New Haven's average unit costs for fuel, material, and supplies had increased about 73 per cent. and its average hourly rate for labour by about 67 per cent. since 1935.

FRANCE

Revised Freight Rates

New schedules of railway freight rates, which have been under consideration for several years (see *The Railway Gazette* of January 10) came into force on March 17. They were not applied earlier in the year because of the Government's policy of all-round reductions of prices. The new schedules, while purporting to give a reduction of 11 per cent. on the average rates of January 1, 1947, actually involve considerable variations, sometimes amounting to rises or declines of 50 per cent. compared with the old tariffs.

The first principle followed by the S.N.C.F. is the fixing of a low ("floor") scale based on partial prime costs. This involves sharp changes in tariffs where goods are in small bulk, requiring much handling, and explains sharp advances in some rates for short distances, and the lowering of rates for bulk transport.

The second guiding principle is the adjustment of tariffs between a "ceiling" and a "floor" scale. The "ceiling" is formed by the maximum of competitive prime costs.

Effect of New Rates

Numerous protests have been made against the sharp rises in some rates for distances up to 50 miles. It appears clear that the S.N.C.F. is not interested greatly in such short-distance traffic, where competition with the road carriers is too keen. But it is evident, also, that the S.N.C.F. is ready to cut tariffs for distances greater than 50 miles to secure traffic in competition with waterways. For distances between 50 and 400 miles, the railways are in a position to adjust tariffs so as to enable them to balance their budget.

Publications Received

Männer der Schiene (Men of the Rail). Published by the author, Ernst Mathys, at Berne, 1947. Printed by Werner Stucker, Liebefeld, Berne. 8¼ in. × 6 in. 280 pp. 44 portraits, 38 other illustrations.—The approaching centenary of the first railway to have its entire route in Switzerland, to celebrate which preparations have for some time been in hand, gives particular interest to the activities of those business men and engineers who have been associated, not only with the promotion and extension of the first railway undertakings in the country, but with the technical developments which have left certain distinctive characteristics on the Swiss railway system, culminating in the general extension of single-phase electrification. Herr Mathys, the well-known librarian of the Swiss Federal Railways, and author of other works dealing with their history, has gathered together in the present volume a series of 44 biographies of the principal figures met with from the opening of the Zurich & Baden Railway in 1847 to the introduction of the latest stages in electrification, each told with no little charm and full of interesting detail. They are classified under five headings, beginning with those who held executive positions or were associated with public activities connected with the promoting and financing of the undertakings, for example, Escher, of the Gotthard Company; Stämpfli, the early advocate of nationalisation; Bener and Holsboer, of the Rhaetian Railway; and Weissenbach, so well known at the International Railway Congress of 1910. Then are given the engineers, such as Brandt of the Simplon; Favre and Gerwig of the Gotthard; and Etzel of the Central line; after that come the mountain railway engineers, with Riggenbach as the central name; and then the great names connected with electrification, Behn-Eschenburg, Huber-Stockar, and Wyssling. In the production of this welcome contribution to a fascinating story the author has been assisted by his brother, Herr Hermann Mathys, formerly in the Rates & Fares Section of the Swiss Federal Railways.

Locomotives of the L.N.E.R. By O. S. Nock. Obtainable from L.N.E.R. Advertising Manager's Offices, 26, Pancras Road, N.W.1, station bookstalls (and at York and Waverley Station, Edinburgh). 8½ in. × 5½ in. 68 pp. Illustrated. Paper covers. Price 2s. 6d.—The main theme of this booklet is the comprehensive programme of locomotive standardisation evolved by the L.N.E.R., and this programme is shown in relation to the L.N.E.R. pre-war locomotive policy, and the wartime problem, when locomotive building shops often were occupied with special work. The evolution of the new standard types is traced under separate headings, and a table summarises the new standard types, and certain non-standard types to be maintained. A series of excellent illustrations shows the nine standard types so far evolved, and each is accompanied by drawings and principal dimensions. In three appendices are given a list of present classes, the renumbering scheme, and a list of named engines, the chief purpose of which is to give an indication of the extent, age, and variety of the present L.N.E.R. locomotive stock.

Home-Grown Timber Trees: Their characteristics, cultivation and uses, with notes on town-planting. Published by the Timber Development Association Limited, 75, Cannon Street, E.C.4. 8 pages. 7 in. × 10 in. By giving it in tabular form, a great deal of information is packed into this slender red booklet; 11 columns appear on each page. To replace the 500,000,000 cu. ft. of timber cut from our woodlands during the first world war, and a larger volume during the recent war, there is urgent need for replanting; 28 broad-leaf species and 18 conifers are recommended for our climate. Ten details are given against each, such as size, soil, whether it needs much light or is "shade-enduring," reaction to frost and wind, means of cultivation, rotation, and the properties of its timber. These tables are followed by notes on time and spacing of planting, and recommendations for town planting, often, probably, as part of town planning. All this information is most valuable and interesting.

Radio Experiments on a British Railway

Driver-to-guard and train-to-lineside tests carried out by the L.N.E.R.

A PAPER read on May 21 by Mr. G. H. Leversedge at the convention of the British Institution of Radio Engineers has given details of radio experiments on moving trains carried out by the L.N.E.R. since 1943.

Mr. Leversedge introduced his paper with a review of railway communication systems adopted already in the United States, where both inductive and orthodox radio methods have been applied. Inductive communication has the advantage that no frequency allocation in the radio bands is required, and existing lineside wires can be used to carry the transmission for a considerable distance without interfering with their normal functions. At the present time, however, such wires often are required for high-frequency multi-channel telephone or telegraph circuits, making it necessary to ensure that there is no interference from the inductive system.

The power requirements of inductive systems normally are higher than those of equivalent radio communication, and the possibility exists of inductive communication proving useless at the times when it is most required as a result of damage to lineside wires by snow or gales. Frequencies used for the purpose in America range between 7·5 kc/s. and 170 kc/s., and the transmitting and receiving coils on the trains vary from small inductors mounted close to the rails, to large loops completely surrounding the engine or brake van.

Goods Train Experiment

The L.N.E.R. experiments described in the paper all have been made with normal radio communication. In the first tests, made in Sepetmber, 1943, communication was established between driver and guard on a train of 50 wagons, travelling from London to Hitchin *via* Hertford. The transmitting and receiving apparatus was of a type manufactured for the British Overseas Airways Corporation by Rediffusion Limited, and operated on 77·15 Mc/s. Amplitude modulation was employed for the transmission of speech, together with the facility for modulating the carrier at 7 kc/s. to give visual and audible call indications. The transmitter was brought into action automatically when the hand-set was lifted. A switch incorporated in the hand-set operated the send-receive switching through a Bowden wire.

The equipment consumed about 50 watts, supplied from a 24-volt battery, and gave a power of 0·6 watts in the aerial. The equipment at the front of the train was installed in a guard's van and not on the engine. Horizontal dipole aerials were mounted about 6 in. above the roofs of the vans at each end of the train. Communication throughout the journey was very good, except that signals faded completely in tunnels.

A further trial with the same type of apparatus was made in March, 1944, between a local passenger train and Gordon Hill signal box on the same line as the previous test. In this instance the signal box aerial was mounted at a height of about 20 ft. Communication was established with the signal box for a distance of about two to three miles on each side.

In April, 1944, a demonstration was arranged to show the possibility of using a radio link for communication between a train and the company's trunk telephone network at Peterborough. In this instance the only set available for installation in the train was a Marconi transmitter working on the relatively low frequency of 1,675 kc/s., which was not ideal for the purpose. The train aerial consisted of an insulated loop supported on bobbin insulators a few inches above the roof of the saloon, and the earth connection was made to the vehicle underframe. At Peterborough the output of the fixed receiver was connected to a jack on the trunk exchange, and the telephone circuit was connected similarly to the transmitter modulator. Manual send-receive switching was used.

In these experiments the train established communication with Peterborough when passing through Biggleswade, about 33 miles away, and no difficulty was experienced in holding conversations with offices in London, sometimes through two railway switchboards in addition to that at Peterborough.

Use of Frequency Modulation

During the last two years, more extended and technical trials have been carried out in conjunction with the General Electric Co. Ltd. in the Bradford area of the L.N.E.R., where the topographical features are such as to make radio communication as difficult as anywhere in the country. In one of these trials, both amplitude-modulated and frequency-modulated transmitters were used for communication between a train and the G.E.C. radio station at Wibsey. It will be recalled that frequency-modulation has been adopted in several instances for railway radio communication in the United States and Canada. In this system the audio-frequency input to the transmitter is made to vary the frequency, instead of the amplitude, of the radio-frequency output. Special receiving apparatus is required, as the normal radio receiver is adjusted for maximum response to a single frequency with a rapid attenuation on each side. Apart from the high quality of reproduction, freedom from interference is claimed frequently as an advantage of the frequency-modulation system, but the tests described did not provide for comparing the two methods under similar conditions of external noise level.

The apparatus worked on a frequency of 80 Mc/s, with a power of 7 watts in the aerial. Aerials were quarter-wave vertical rods. Communication between the engine and rear brake van on a three-coach train was satisfactory in all conditions, including tunnels, but the noise level on the tank engine was very high, particularly in tunnels on up grades, and in these circumstances an earpiece had to be used in addition to the loudspeaker; speech then was quite intelligible. Communication between the train and Wibsey was very variable, and quite impossible in tunnels and deep cuttings. The tests were on the route Bradford-Halifax; Halifax-Keighley; and Keighley-Bradford.

Frequency-modulation was used again in trials between a train and the signal boxes at Cullingworth and Ingrow in September, 1946. This section of line passes through Lees Moor Tunnel, which is 1,527 yd. long, and has two "S" bends. Three relay stations were installed in the tunnel, using quarter-wave vertical rod aerials mounted on spikes driven into the ballast midway between the tracks. With this arrangement, communication could be obtained with one or other of the relay stations from all positions in the tunnel, but direct transmission round bends in the tunnel was found not to be possible. The radio apparatus worked on about 81 Mc/s, with a maximum deviation of 12.5 kc/s to accommodate the frequency-modulation. Power was taken from a 12-volt battery; the input on "transmit" was 16 amp., giving about 10 watts in the aerial. The signal box aerials were mounted on poles at a height of 15 ft. Direct communication between the two signal boxes was quite satisfactory.

Radio in Marshalling Yard

A demonstration of radio for marshalling yard working was given at Whitemoor in August, 1946, by Pye Telecommunications Limited. The transmitter used worked in the 70-100 Mc/s band, using a crystal oscillator and two multiplier stages. The receiver incorporated automatic volume control, and a means of reducing gain in the absence of a signal in order to reduce background noise. The power consumption from a 12-volt battery was 5·7 amp. receiving, and 12·7 amp. transmitting. A 10-12 watt amplifier was used for modulating the transmitter and operating the receiving loudspeaker.

The sets were installed in a diesel-electric shunting engine and a shunter's cabin. On account of the limited clearance between the locomotive and the loading gauge, the dipole aerials were mounted horizontally just in front of the cab on the metal roof of the engine housing, with a clearance of only 3 or 4 in. In these conditions the aerials were directional, but the angle of coverage was found sufficient. It was found that very good communication was obtained when the engine was three miles away from the shunter's cabin, and it is considered that for practical purposes less powerful equipment, giving a range of about a mile, would be adequate.

Future Applications

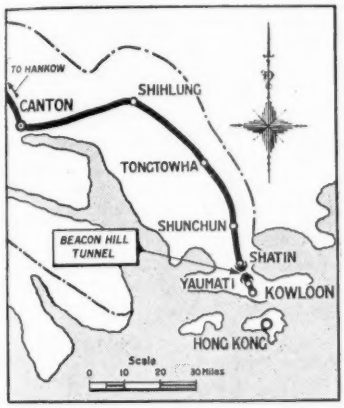
Mr. Leversedge concluded by suggesting the possible application of television for use in signal boxes which control level crossing gates out of sight of the signalman. He stated that the possibility of applying radar to the special circumstances of railway operation, where it is necessary to ensure that failures will not lead to lessening of the safety factor, were being examined at the present time. For land-line communication, also, electronic technique offered the advantage of reducing the number of conductors required for signalling functions and indications by the use of selective frequency control. It would be apparent, he said, that British railways were fully alive to the advantages of making use of many modern developments in electronic engineering.

MILAN-DOMODOSSOLA SERVICES.—Electric traction on the main line from Milan to Domodossola was introduced on May 4 (see also our May 2 issue). Seven trains a day each way, including four fast trains, now operate between Milan and Domodossola. The times of the "Simplon Express" are 2 hr. 5 min. southbound and 2 hr. 15 min. northbound, as against 2 hr. 50 min. and 2 hr. 52 min. respectively with steam traction. The fastest train between Milan and Domodossola is a so-called *elettrotreno* (a light railcar set) which covers the whole distance of 77·6 miles in 1 hr. 45 min., conveying second and third class passengers only. As from July 1 an additional train will be run in both directions.

The Demolition of Beacon Hill Tunnel, Kowloon-Canton Railway

By Lt-Colonel R. D. Walker, O.B.E., M.C., M.Inst.C.E., formerly Manager & Chief Engineer, Kowloon-Canton Railway, and Officer Commanding Field Company Engineers, Hong Kong Volunteer Defence Corps

BEACON HILL TUNNEL is a single track, standard-gauge, tunnel which pierces Beacon Hill, about four miles north of the Kowloon terminal. The maximum cover above rail level is just over 1,300 feet, and the ground is mainly loose granite. The length of the tunnel, which is lined throughout with good brickwork, 33 in. thick, is 7,212 feet (1⅜ miles). The southern end and approach



Map showing location of Beacon Hill Tunnel

is graded 1 in 100, and the northern 1 in 400; there is a short level portion of approximately 300 linear ft. in the centre (Fig. 1). The tunnel took three years to build, and was completed in 1910. It is fairly dry, except near the northern end, where there is considerable percolation of water.

It was destroyed in the late afternoon of December 8, 1941, by the Field Company Engineers of the Hong Kong Volunteer Defence Corps, about 10 hours after the Japanese had attacked in force over the British-Chinese border, 18 miles farther north. It was the rearmost demolition of 18 major defensive road and rail obstructions blown by them.

Some of these demolitions were deferred; that is, they were charged many months before being fired. Others were prepared partially before the attack by the fitting of permanent structural devices to facilitate the placing of explosives to the best advantage. The limited structural gauge of Beacon Hill Tunnel, however, precluded the building in it of any preliminary aids, and a simple method of demolition had to be planned. This was provided by what was called a "wagon bomb."

The "wagon bomb" consisted of a 30-ton covered goods wagon, inside which was built a wooden platform to enable explosives to be packed just under the roof (Fig. 2), thus concentrating the maximum force of the explosion where it could do the most damage, just under the crown of the arch. It was charged at Kowloon Station directly war had broken out, and then propelled to its firing position as soon as practicable. This position was at the central level portion of the tunnel (Fig. 1). This gave the best tamping effect, as the explosive wave would strike the solid lining quickly. Slabs of gun-cotton, boxes of dynamite No. 1, and tins of ammonal were used to make up the 14-ton charge. Several electric detonators were embedded in the explosive, and electric leads were run out to a protected blast position near the southern portal of the tunnel.

Firing of the "wagon bomb" was by

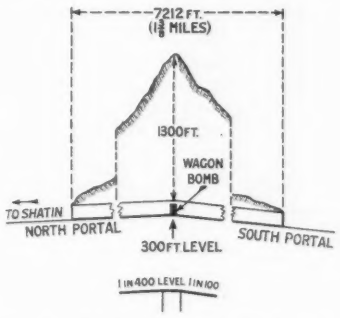


Fig. 1—Distorted longitudinal section through tunnel

an exploder, and a most unusual spectacle was afforded the firing party. A tongue of whitish smoke, about a quarter of a mile long, shot out of the southern portal, and almost immediately was sucked in again. This unexpected effect, combined with a muffled rumble resembling distant thunder, was the meagre evidence vouch-

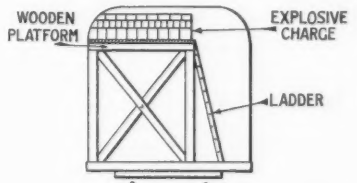


Fig. 2—Section through "wagon-bomb"

safed the sappers of the damage they had done to the Japanese war effort.

Of the total length of Beacon Hill Tunnel, 2,646 linear ft., or 37 per cent., of brick arch were destroyed. In addition to this damage there were numerous arch cracks in the remaining 63 per cent. With the exception of a short length near the "wagon bomb," where all the lining of the tunnel was destroyed, the demolished brickwork was above the springing of the arch. The destruction was in discontinuous lengths, and there were many falls of rock where the tunnel passed through loose and shifting ground.

The Japanese cleared the débris and reopened the tunnel, and the line, with a flourish of trumpets, in May, 1942. Their jubilation was short-lived, however, as it collapsed a few days afterwards. Several months of very heavy remedial work had to be undertaken before trains were allowed to pass through the tunnel at dead-slow speed—one hour to complete the journey of 1⅜ miles.

During the period 1942-45, the Japanese erected 675 sets of heavy timber frames to shore the brick arches. They also built a short length of reinforced concrete arch which reduced the dimensions of the tunnel by one foot all round. Serious trouble because of falling rock occurred during the whole period of Japanese occupation, and the tunnel had frequently to be closed to traffic.

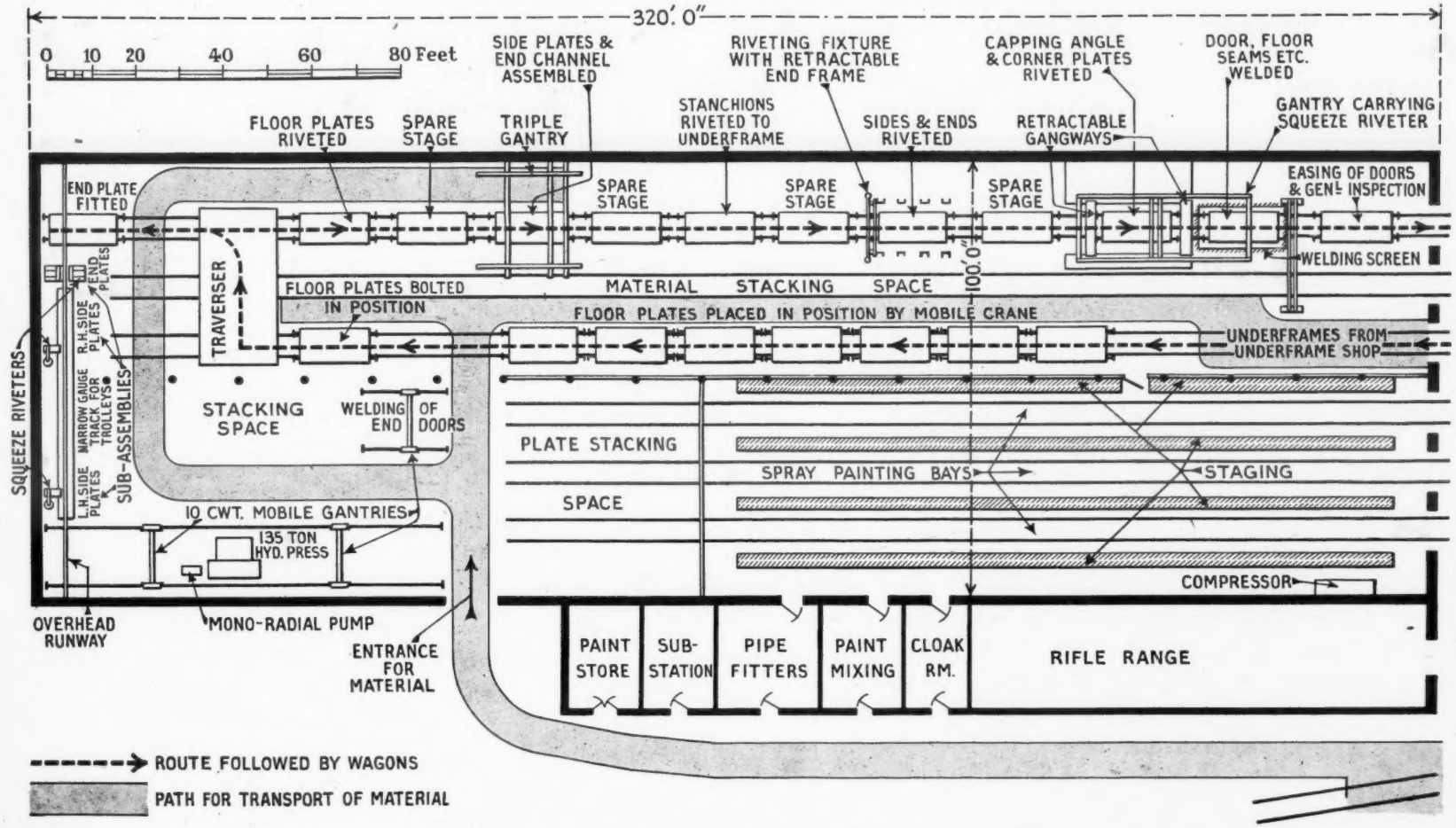
Permanent Remedial Work

One million, three hundred thousand red bricks are required to replace the missing brickwork, and a contract to effect the necessary repairs was signed in August, 1946. A cement gun will be used to grout the cracks in the arches, as soon as a suitable compressor can be obtained.

An idea of the immense amount of damage caused by this simple "bulk" type of demolition was gleaned by the writer, during and after the war, from remarks passed to him by Japanese Engineer officers, news items in the Japanese-sponsored press, by the questioning of local Chinese, and from Mr. K. L. Hu, B.Sc., who is acting now as Engineer, Way & Works, of the Kowloon-Canton Railway (British Section). By an irony of fate, Mr. Hu, who is responsible for the reconstruction of the tunnel, was the lance-corporal of Engineers in charge of the preparation of the "wagon bomb" used for its destruction.

OPENING OF CENTRAL LINE EXTENSION TO GREENFORD.—The 3¼-mile extension of the London Transport Central Line from North Acton to Greenford will be opened on June 30. There are three new stations, at Hanger Lane, Perivale, and Greenford. The line runs alongside the G.W.R. main Birmingham route, which has been widened specially, and will bring a high-frequency service to a large residential and factory area. Trains will run through to Greenford from Leytonstone, Liverpool Street, and the West End. There will be a train to Greenford every 6 min. in the peak periods, every 7½ min. in the slack period, and every 10 min. in the evening. The total number of trains running over the line will be 292 a day. Ealing Broadway, the present western terminus of the Central Line, will continue to be served by Central Line trains running through to the West End and East End as hitherto. The new line will be the most modern on the Underground system, incorporating many features contributing to smooth running. Rails have been laid in half-mile lengths, with expansion switches at their ends to eliminate the usual expansion gap and reduce noise still further. Rail baths for anti-freeze fluid, curve oilers, and electric heaters for points are other devices used on the extension. The construction of the new extension has been carried out jointly by London Transport and the G.W.R. The G.W.R. has been responsible for widening the track alongside the main Birmingham line, and also for building stations, signal boxes, and civil engineering work. London Transport has equipped the line with permanent way, signalling, and power supply, and will operate the train service. With the opening of the new line, the G.W.R. steam railcar service between Westbourne Park and Greenford will be discontinued, and stations at Park Royal West, Brentham Halt, and Perivale Halt will be closed. The extension of the Central Line to Greenford will be continued to Northolt and West Ruislip.

Large-Scale Production of Wagons at Ashford



General layout of the wagon body shop at Ashford Works, Southern Railway

Large-Scale Production of Wagons at Ashford

Adaptation of the Southern Railway works to facilitate construction of 1,500 16-*ton all-steel wagons for the L.N.E.R.*

THE Southern Railway, with the authority of the Railway Executive Committee, is to build at Ashford Works, Kent, 1,500 16-ton all-steel wagons for the L.N.E.R., to the design of that company's Chief Mechanical Engineer. The wagons conform to Railway Clearing House Specifications, and are chiefly of riveted construction. The bodies are built up from ¼-inch mild-steel plate, and steel pressings of the same thickness are used for the stanchions, end doors, and side doors.

Though plant exists at Ashford for wagons with steel underframes and bodies of timber, the production of wagons with steel bodies had not previously been undertaken there, and the execution of an order of this magnitude required special consideration of the resources available. Under the direction of Mr. O. V. Bulleid, Chief Mechanical Engineer, a shop 320 ft. by 130 ft., used for wagon building and repairs in pre-grouping days, and subsequently for odd work, was used as an adjunct to the wagon-underframe building shop for the preparation of the steel body details and their subsequent erection. In the underframe shop the constituent frame members and details are prepared, assembled on jigs, and mounted on their wheels, and the progressive character of this work can be seen from the accompanying photographs. The jig provides for the assembly by temporary bolts of the axleguards, brake vee hangers, and solebar and headstock knees. At the next stage these details—including buffing trimmers, body brackets and bearing spring shoes—are hydraulically riveted in position.

The solebars are then mounted on a mobile jig; fixtures on the jig provide for clamping the solebars firmly to the frame of the jig, while the headstocks, diagonals, and longitudinals are assembled by hydraulic riveting. This method of construction ensures that wagon underframes, when completed, are in perfect alignment longitudinally, transversely, and also diagonally.

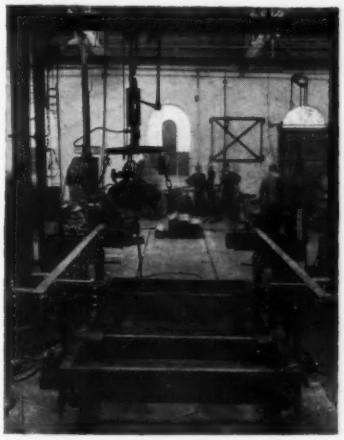
Close to this jig, the wheels, with axleboxes mounted, are ready to receive the completed underframes, which are lifted by pulley blocks from the jig, and during the lowering process the wagon bearing-springs are placed in position. The underframe is then ready for its short haul to the body erecting shop where the continuous processes similar to those used in underframe shops are followed until the wagon leaves the shop ready for use. The diagram on the opposite page shows the body-shop layout, and the movement through the shop is shown by the thick arrowed line. The shop is equipped with an Ashford-built traverser, to assist the progress of the wagons through the shop, and the component body details are erected at convenient stages.

The floor-plates, previously drilled for attachment to the body side panels, have their outside edges flanged by a 135-ton hydraulic press operated by a mono-radial pump. The press can deal with ¼-in. plates up to a width of 8 ft. The plates are moved from the press by a mobile crane and placed in position on the underframes. Synchronising with the preparation of the wagon flooring, the body stanchions are attached to the side and end plates by compressed air squeeze-riveters, which machines are practically noiseless. The wagon underframes, covered with their floor components, are then traversed to the main assembly road, and the floor details are riveted to the frame by pneumatic riveting hammer.

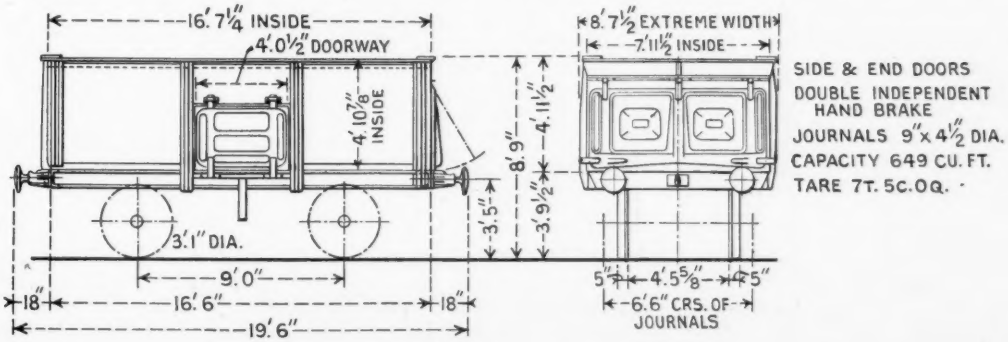
Minimum Physical Effort

After leaving the floor assembly stage, the fixed end plates are fitted, then the side plates and end channels, which are lifted under conveniently sited fixed gantries. The wagon is then put inside the riveting fixture, a simple and ingenious device consisting of two side frames mounted on the floor of the shop clear of the sides of the wagon, and an end frame, suspended from the roof by balanced pulley gear, which is clamped to the side frames when it is in use, or can be raised to allow the next wagon to enter the fixture. The various vertical and horizontal members of the fixture are arranged to form mountings for pneumatic riveting holding-up tools. A sound job thus is produced with a minimum of physical effort.

The wagon passes under another gantry, on which runs a carriage carrying



Solebar sub-assemblies in position on mobile underframe assembly jig, ready to receive centres and headstock



Principal dimensions of the Ashford-built wagons

a squeeze-riveter with which the capping angle is riveted in position. Staging, with retractable balanced transverse gangways, is here provided for the operators at a convenient level, and the rivet furnace is at a still higher level to facilitate the supply of rivets.

At the next stage the wagon enters a curtained welding chamber, where the pressed-steel end and side doors are lifted into position by electric and pneumatic equipment, and the hinges, floor seams, and other details are welded. The wagon then is transferred to the painting bay under the same roof where it is spray-painted a dark lead colour, then lettered and numbered, and put on the weighbridge and tared.

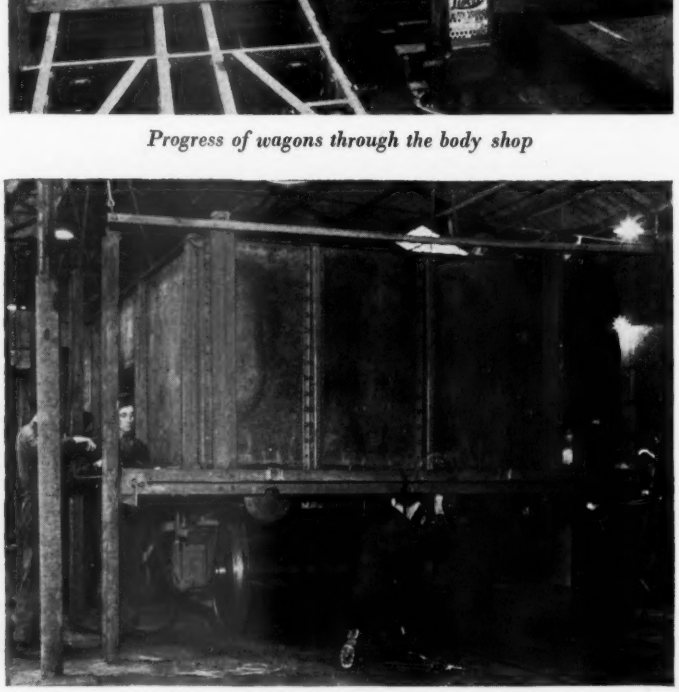
It takes approximately one day for a wagon to be completed in the shops after the underframe has been received there. An output of 55 wagons a week—one an hour—is maintained, and this necessitates the insertion of more than 100 rivets an hour by each of the squeeze-riveters. A battery of drilling machines worked on double shift for several months before actual construction began, to produce sufficient drilled plates to keep the assembly line fed.

MAIN-LINE PASSENGER TRAINS RESUMED IN EIRE.—From May 24 passenger trains are being run again on C.I.E. main lines on four days a week (Mondays, Tuesdays, Thursdays, and Saturdays). There is one service each way on these days, and connections are given to the branch lines which have been kept open in recent months for goods traffic. Main-line passenger trains had been suspended since February 24, and since then goods trains have been running on three days a week only. This partial restoration of trains has been made possible by American coal supplies, and by conversion of coal-burning engines to oil-burning.

INTERCHANGE PASSAGE AT LEICESTER SQUARE STATION.—A new passage is being constructed between the Northern Line and the Piccadilly Line platforms at Leicester Square Station, London Transport, to improve the passenger interchange between the two lines. The present interchange is by means of the original lift passages at the south end of the Northern Line platforms and the west end of the Piccadilly Line platforms. The new passage will give direct connection between the lower escalator landing of the Piccadilly Line and a central position on both platforms of the Northern Line. It will be a straight tunnel of circular section, 100 yd. long. To break the monotony of a straight passage, it is being constructed in various diameters, sections of 12 ft., 12 ft. 6 in., and 15 ft. being introduced. The passage will have fluorescent lighting in accordance with the new standard now being introduced at more important stations in Central London. The work of construction includes not only the driving of the new passage, but also the removal of part of the tunnel lining of the running tunnels of the Northern Line, where the passage passes under the southbound line in a subway to give access to both platforms. To carry out the work with minimum interference to the public, a working shaft 100 ft. deep is being sunk from street level in Upper St. Martin's Lane. By means of this shaft, all the excavated material and the new material required for construction will be moved from and to the works. The passage should be completed by the end of the year.

Solebar on jig, with axleguards, vee hangers and end knees bolted in position. Riveted sub-assembly under hydraulic riveter on the right

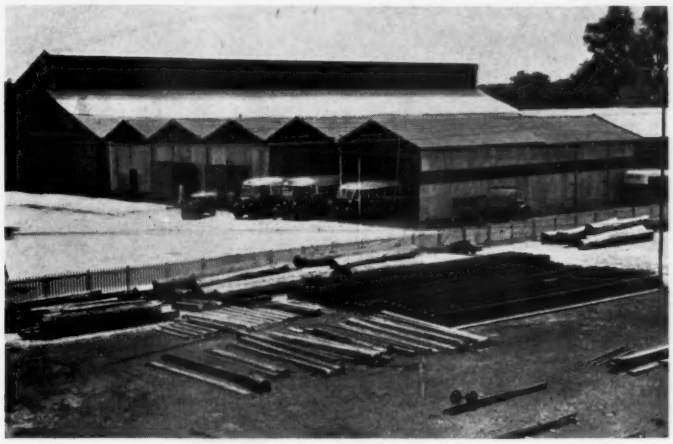
Progress of wagons through the body shop



Wagon riveting fixture

Co-ordination of Transport in Hyderabad*

Practical experience with British transport vehicles and the control of State-owned services under one administration



Typical bus depot at rail station

HYDERABAD, the largest State in India, has an area of some 85,000 square miles, much the same as Great Britain, and a population of nearly 18 millions. During 1946, the railways moved nearly 5,000,000 tons of goods. Some 500 miles of new railways are planned. The overall aim is to have a well-balanced industrial and agricultural economy, and an efficient and co-ordinated transport service is necessary.

Roads are fairly good in Hyderabad, with some 5,250 miles under the care of the Public Works Department. In the post-war plans it is proposed to build a further 7,750 miles over the next twenty-five years, at a cost of nearly £20 million, and some 11,000 miles of minor roads.

The railway was purchased from an English company in 1930 by H.E.H. The Nizam's Government. This company had operated the railway with outstanding success since 1883, and on the acquisition H.E.H. entrusted the management to a London board of directors. Its members were chosen for qualifications embodying business, administrative and technical ability, thus reproducing as closely as possible the tradition and the policy of the old company's board. After 1930, the undertaking's activities were extended to road and air transport, with efficiency and success.

In 1941 the administration was transferred to Hyderabad and a new board constituted with the same powers of sanction as were vested in the London board. Under its constitution the Railway Board is responsible to the Government's Cabinet for the management of the railway and its ancillary services, and forms the administrative link between the Government and the General Manager as head of the executive. The Board's functions are: (1) to give effect to the railway policy approved by the Cabinet; (2) to exercise Government powers of sanction; (3) to advise on political issues affecting transport; (4) to take full responsibility for the financial structure of the undertaking and the administration of the services; (5) to appoint the General Manager and senior staff.

The Prime Minister is the President of the Railway Board, and the Communications Minister is Vice-President, so that liaison between the Government and the Board is close. All members are appointed by the Nizam.

The State Railway system comprises 1,360 miles, of which 688 miles are broad gauge and 672 miles metre gauge. H.E.H.'s Government owns 1,302 miles; the balance of 58 miles is owned by the Central Government, but operated by the Railway Board. It is the largest railway system in any Indian State, is a member of the Indian Conference Association, and has pooling arrangements with other railways for wagons, and runs through stock to Madras, Bombay, and Delhi. The railway system connects with adjoining railways at five junctions situated at or near the State boundary, and forms portions of through routes between Northern and Southern India, and between the east and west coasts.

The capital of the railway is £12,000,000; reserve fund, £2,125,000; depreciation funds, £2,625,000; and the staff provident fund, £1,125,000. In 1946 it carried 21 million passengers, of whom 97 per cent. were third class, at an average fare of 0·25d. a mile, and 660 million net ton-miles of goods traffic. Total gross revenue was £4,200,000; the ratio of working expenses to gross earnings after depreciation was 45·8 per cent., leaving net revenue of £2,225,000, or the equivalent of 18½ per cent. on the capital.

The main statistical features, as at the end of 1946, are:—

	Broad gauge	Metre gauge
Net ton miles per engine hour	1,993	1,085
Gross ton miles per train engine hours	9,834	4,922
Wagon miles per wagon day	53	54
Average wagon load per run (tons)	14·6	8·85
Number of engines	90	75
Number of seats	8,466	6,166 (3rd)
Number of wagons	2,617	1,123
Rolling stock under repair :—		
Engines per cent.	10	10·6
Carriages per cent.	7·82	10·1
Wagons per cent.	2·47	3·67
Engine miles per day per engine in use :—		
Passenger	166	168
Goods	119	118
Mixed	195	119
Coal consumption per 1,000 gross ton miles :—		
Passenger	150·4 lb.	215·2 lb.
Goods	134·9 lb.	159·9 lb.
Engine miles per engine failure	95,000	
Cost of standard 1st class or unit repair :—		
Locomotive	£1,552	£1,383
Carriage	£82 7s.	£48 1s.
Wagon	£18 15s.	£16 5s.
Stores balance	£810,000 (63 per cent. of issues during year)	
Staff directly employed	17,092	
Staff per 1,000 train miles	3·95	

Development has been progressive; 1933 marked the opening of a new broad-gauge line some 110 miles long to Purli in the

Railway hotel at Aurangabad

* Abstract of a paper read before the Institute of Transport on May 8 by Colonel E. W. Slaughter, C.B.E., M.I.Mech.E., M.Inst.T.M.I.E. (India)

Hyderabad (B.G.) Railway Station in 1938

West of the State; 1938 had four outstanding events—H.E.H. The Nizam approved the inauguration of Air Development and services under the supervision of the Railway Board and opened a remodelled broad gauge station at Hyderabad, and six weeks later a first class railway hotel was opened at Aurangabad, and a project for 100 miles of new metre-gauge railway to Adilabad at the north of the State was approved by the Government.

Diesel Railcars

In 1938, four diesel-mechanical railcars were ordered from the Drewry Car Co. Ltd., to enable a more flexible third class passenger arrangement, particularly in connection with the co-ordination of the road services. The railcars were delivered for service in 1940, and proved to be very popular for lower class travel and are the only railway stock in India giving air conditioning for the lower class passenger. Under site tests these cars did an average of 40 m.p.h. with both power units operating. Each car has run on an average of 40,000 to 50,000 miles a year since 1940 and they are in excellent condition. The following are the main direct costs in 1946:—

	Pence	
Running repairs	2·31	per mile
Workshop repairs	0·50	,,
Wages of drivers	1·51	,,
Wages of guards	0·60	,,
Fuel	2·56	,,
Other expenditure, oil, grease, etc.	1·63	,,
	9·11	,,

The average direct cost per mile for the last three years was just over 8d.

Formation of Road Department

The Road Department was formed in 1933 to test the value of co-ordination, and to gather experience in maintenance, and in operation, of mixed types of passenger vehicles. The Railway Board set out early in 1935 to tackle the problem of road transport in the State. The Government gave the railway a monopoly under the following conditions:—

(*a*) Road services to be run in co-ordination with the railways in the interests of the public and State;

(*b*) the road vehicles to offer a relatively high standard of comfort at economic fares, and run to schedule;

(*c*) if it was found that the railways could not provide economic road transport then the Government would withdraw any or all sections of the monopoly;

(*d*) road transport personnel to be given the same standard of conditions and security of service as railway men;

(*e*) the financial obligation to H.E.H.'s Government to be the same as that of the railway.

Single-deck bus in Hyderabad

Interior of single-deck bus

Co-ordination offers the only means of ensuring satisfaction to both public and the State, and no real economic solution to inland transport can be realised until and unless road and rail have an agreed rates structure, and are fully co-ordinated under identical authority, with a common

financial interest. With the zonal system of dual development—by dividing big industrial centres into inner and outer regional belts—railways can speed up traffic between railheads. Railheads might be, say, 20-50 miles apart, according to density of traffic, with road services collecting and transporting passenger and goods traffic within the belts.

The decision of the Government and the Railway Board in 1935 to go ahead with the scheme of co-ordination materially helped the progress of transport.

Broad Principles Evolved

The following are the broad principles that have been evolved:—

(*a*) A higher standard of comfort and maintenance should be provided than that supplied by private enterprise and all services should be operated to regular schedules.

(*b*) Chassis should be of a robust type, diesel-engined, with bodies well designed and preferably of all-metal construction.

(*c*) Centralisation of main repairs at Hyderabad City, with outlying depots for light repairs and operational centres.

(*d*) Planning for new services as feeders to railways as far as possible outside the main cities, with close examination of the question of whether or not certain railway stations would be necessary if frequent road services were available.

(*e*) Setting up out-agencies to feed the railways and to assist generally in developing a self-contained area for goods collection and delivery services, with through road and rail rates wherever possible.

(*f*) Standardised roadside shelters at main halts, and other conveniences for passengers as the demand for transport service grows.

(*g*) Popularise road-rail travel by running excursions and other facilities, with combined services and rail-*cum*-bus tickets for fairs and religious ceremonies.

(*h*) Fix fares as low as possible, leaving a margin of 5 per cent. on capital after suitable provision for depreciation.

The State Civil Aviation preliminary work was entrusted to an Aviation Board in 1933-1938. The General Manager of the Railways was associated with the Board as Executive Member. In 1938, the Government instructed the Railway Board to set up and administer an Air Department with the following policy laid down:—

(i) First class airport to be established near the capital and airgrounds sited at suitable centres in the State, for public security purposes and providing facilities for air communications with British India.

(ii) Air transport to be made available within the State with the employment of local personnel.

(iii) Scheduled services to be organised to places outside the State.

A new company formed in 1946, known as Deccan Airways Limited, is operating scheduled services to Bombay, Delhi, and Madras. The Government and the Railway Board have a majority holding in this concern; the railways are represented on the board by the General Manager, as Chairman.

Road-Rail Monopolies

State control of road-rail monopolies with common financial interests has certain advantages in countries similar to Hyderabad, provided that the administrative authority has sufficient ability and political independence to maintain the organisation on an efficient and commercial basis, and can rely on the full confidence of the Government. It should have power to appoint all senior executives under its direction, and should be responsible for the main financial structure, including the building-up of adequate depreciation and reserve funds.

Road-rail co-ordination aims to provide an economic transport system on the basis of a common financial interest. It follows, then, that there are many immutable principles:—

(*a*) It is of paramount importance that day-to-day development and control should be highly efficient, and that maintenance should be kept at a high level.

(*b*) There should be the closest co-operation between senior officers and staff of the railways and road services, particularly commercial and operating officers. Technical, operational, statistical, and other knowledge should be pooled, and efforts made for inter-change of personnel and inter-training in certain sections of the services.

(*c*) Road-rail through rates and fares should be provided wherever possible, and also joint facilities and amenities, such as stations, waiting rooms, and cloakrooms.

(*d*) Duplication of transport must be avoided.

(*e*) Roads to act as feeders to railways, the most direct route to have preference where economically sound. Limitation of long hauls by road service for both goods and passengers, where rail facilities are available.

(*f*) Road-rail terminals to be set up with good storage and economical handling facilities at points 20-50 miles distant, depending on density of traffic.

Goods traffic by rail to be directed to these terminals or main central stations, then handled from rail to door by road service. With through road-rail rates the rating structure should be of the same kind for both means of transport.

(*g*) Regulations must be enforced and any ancillary user must be brought into line with the rates structure when he is in competition with public transport.

(*h*) Developments of out-agency road stations, particularly for agricultural traffic, on the same standards as railway stations, with through road-rail rates. Give the greatest encouragement to full wagon or lorry loads and block train loads.

L.N.E.R. ss. "Arnhem" for Harwich-Hook Route

The lounge of the new vessel for the Harwich-Hook service (*see also pages* 566 *and* 573)

L.N.E.R. ss. "Arnhem"

New vessel for Harwich-Hook route has one class accommodation

TO the many distinguished ships of its fleet, the L.N.E.R. has now added the ss. *Arnhem*, which began service on the Harwich-Hook route over Whitsuntide. The vessel was built by John Brown & Co. Ltd., Clydebank, and presents many innovations on a service which has been running for some three centuries.

The ss. *Arnhem* is rather larger—4,890 tons gross—and has more beam than previous vessels on this service; this has enabled the designers to give more superstructure for screened promenading space and the re-distribution of the public rooms such as the lounge and dining room, the kitchens and other servicing departments on the promenade deck, leaving more space for the sleeping accommodation below deck. Her length overall is 375 ft., beam 52 ft., and depth 27 ft.

A single-funnel ship of striking profile, an interesting feature is the absence of ventilator cowls on the boat deck. The ventilator intakes are at the base of the funnel.

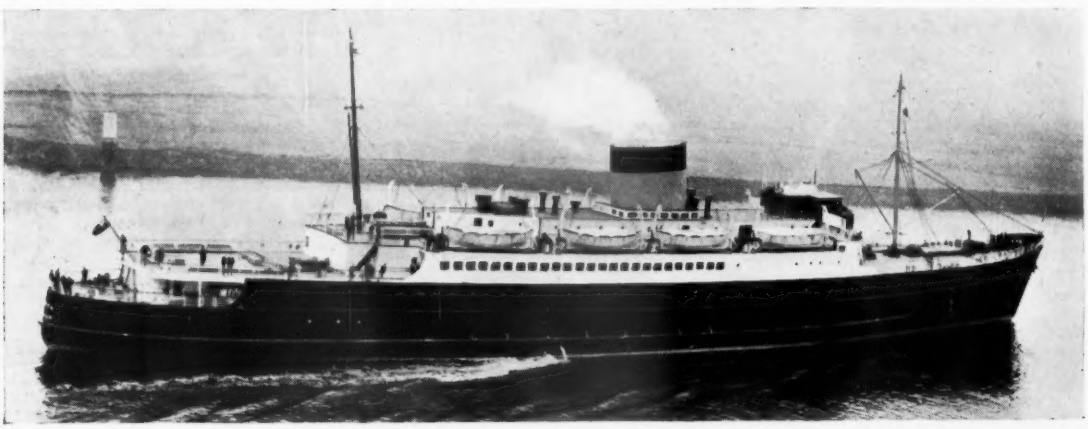
The accommodation also departs from previous practice in being all of one class, and the standard is exceptionally high for such a short cross-channel run. The arrangements are adapted to the special requirements of the night service. Passengers leave the port of departure in the late evening, sleep aboard during the North Sea crossing, and leave the vessel at the arrival port early in the morning. Hence, sleeping accommodation is provided for all the 422, and the large numbers of deck passengers on day-service boats are not envisaged.

There are four 2-berth suites with private bathrooms, and 319 single-berth rooms of which 95 are fitted with a second folding berth. Each cabin has a wash-basin with hot and cold water supply.

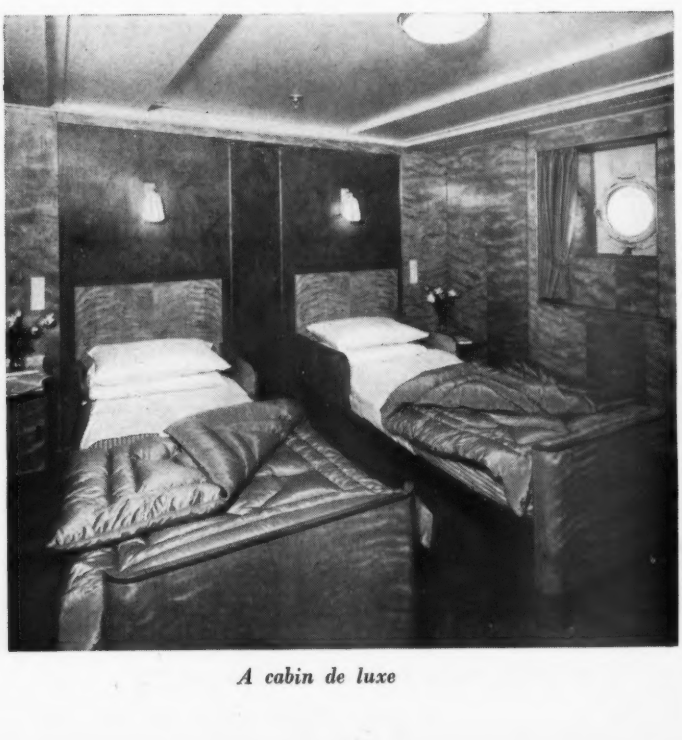
Space is provided in Nos. 2 and 3 holds for 23,000 cu. ft. of bale stowage. Additional arrangements are made for the carriage of baggage and mails forward, and for a special motorcar space aft on A and B decks.

The speed is 22 knots, and power is supplied by two sets of geared turbines taking steam from two oil-fired watertube boilers, with an auxiliary boiler to meet the secondary needs. The electrical demands are met by three 200 kW. diesel generator sets.

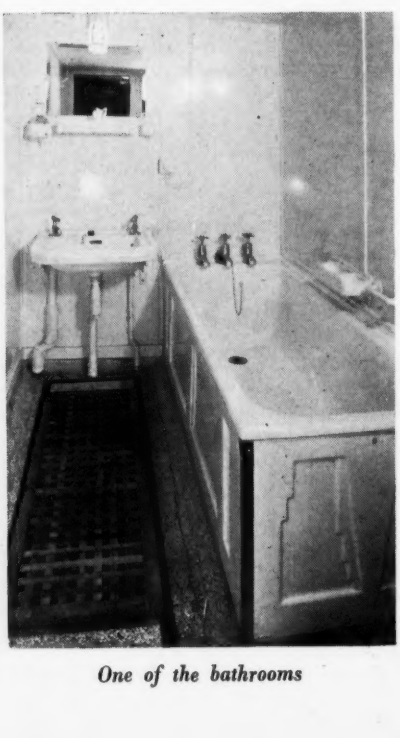
A report of the luncheon during the inaugural cruise appears on page 573 of this issue.



ss. "Arnhem," latest addition to the L.N.E.R. fleet



A cabin de luxe



One of the bathrooms

RAILWAY NEWS SECTION

PERSONAL

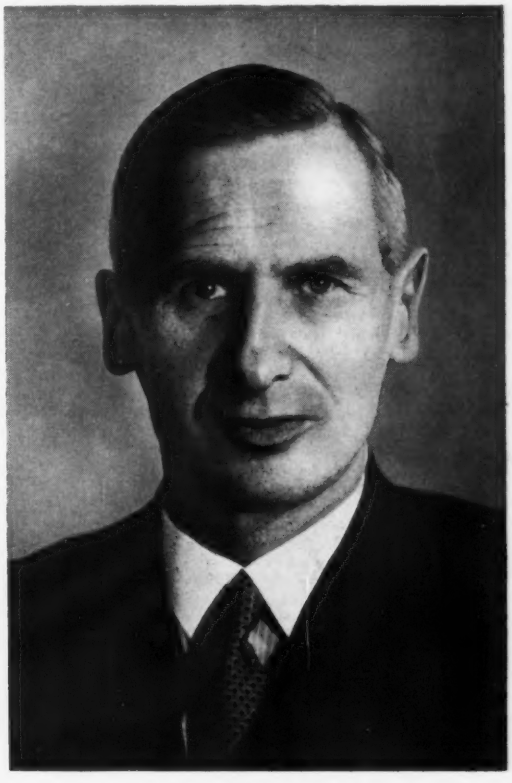
Lord Suirdale has resigned the Chairmanship and his Directorship of the Peruvian Corporation Limited in consequence of his permanent residence in Eire. Mr. W. H. White, Deputy Chairman, has been appointed Chairman.

Sir Charles Henry Newton, M.Inst.T., Chief General Manager of the London & North Eastern Railway, who, as recorded in our last week's issue, is retiring under the age limit on June 6 next, after completing almost 50 years' railway service, has been appointed to a seat on the board, and his Directorship will take effect on the day after his retirement from the position of Chief General Manager. Sir Charles Newton was born on June 6, 1882, and entered the service of the Great Western Railway in 1897, obtaining experience in various sections of the Chief Accountant's Office. He transferred to the former Great Eastern Railway in 1916, as Assistant to the Comptroller, and he became, in 1919, Assistant Accountant, and, in 1922, Chief Accountant. On the formation of the L.N.E.R., Sir Charles Newton was appointed Assistant Accountant of the company. He became Chief Accountant in 1928, which position he held until the end of 1935, when he was made Divisional General Manager, Southern Area. He was appointed Chief General Manager in 1939. Sir Charles Newton, who received the honour of knighthood in the King's Birthday Honours, 1943, was Chairman of the General Managers' Conference, Railway Clearing House, for 1946. He has been a member of the Railway Executive Committee since the committee was appointed in 1939. He is a Commander (Brother) of the Order of St. John of Jerusalem, and holds the rank of Colonel in the Engineer & Railway Staff Corps, R.E. (T.A.). He is also a Member of Council of the Institute of Transport. Sir Charles Newton is the author of a textbook on railway accountancy entitled "Railway Accounts."

Elliott *& Fry*

Sir Charles Newton

Chief General Manager, L.N.E.R., who retires from that post on June 6, and is appointed a Director



Mr. Miles Beevor

Who has been appointed Acting Chief General Manager, L.N.E.R., from June 7

Mr. H. W. Green, Area Electrical Engineer, Newcastle, L.N.E.R., retired on May 24.

We regret to record the death on May 19, at the age of 73, of Mr. Nicholas George Gedye, O.B.E., M.I.C.E., who was Chief Engineer for Docks, Harbours & Waterways, Ministry of Transport, 1919-21, and Chairman of the Association of Consulting Engineers in 1930.

Subsequent to the approval given by the Legislative Assembly of Southern Rhodesia on April 30, and that at a special meeting of Rhodesia Railways Limited, to the purchase by the Government of Southern Rhodesia of the railways, Mr. K. M. Goodenough, High Commissioner in London for Southern Rhodesia, has joined the board of Rhodesia Railways Limited.

Mr. Miles Beevor, J.P., who, as recorded in our last week's issue, has been appointed Acting Chief General Manager of the London & North Eastern Railway, from June 7, has been Chief Legal Adviser to the company since 1943, and, subsequent to the retirement of Mr. W. H. Hanscombe, has been from January 1, 1945, in addition, Solicitor to the company in England. Mr. Beevor was educated at Winchester and at New College, Oxford, and was a Scholar of both colleges. He was admitted a solicitor in 1925, and was a Partner in the firm of Williams & James from 1925 until he took up his appointment as Chief Legal Adviser to the L.N.E.R. in 1943. He was also a Director of the Legal & General Assurance Society Limited from 1933 until he resigned from the board in 1943. He is a Director of the Solicitors' Benevolent Association, and is a J.P. for Hertfordshire. Mr. Beevor served in the R.A.F.V.R. from April, 1941, to November, 1942, and held the rank of Acting Flight-Lieutenant (Administration & Special Duties Branch).

At the recent annual general meeting of the Canadian Pacific Railway Company a resolution, moved by Mr. Huntly R. Drummond and seconded by the Hon. J. E. Perrault, was passed to the effect that there be inscribed in the records of the meeting an expression of the appreciation of the shareholders of the distinguished services rendered to that com-

pany, and to the Dominion, by Mr. D. C. Coleman, who recently retired as Chairman & President, remaining a Director.

Mr. S. J. Symes, O.B.E., lately Chief Stores Superintendent, L.M.S.R., and since seconded to the Ministry of Production, has now retired from L.M.S.R. service. Mr. Symes served his apprenticeship at the Inchicore Works of the Great Southern & Western Railway of Ireland, leaving there to take up an appointment as draughtsman in the Atlas Works of the North British Locomotive Co. Ltd., Glasgow. He joined the Midland Railway at Derby in 1904, and was promoted to be Chief Draughtsman in 1913, and for services rendered during the 1914-18 war he was made an O.B.E. He was appointed Works Superintendent, Midland Division, Chief Mechanical Engineer's Department, L.M.S.R., in 1923, and became Personal Assistant to the Chief Mechanical Engineer, Derby, in 1928. He was appointed Chief Stores Superintendent in 1933, and held that position until 1943, when he was seconded to the Ministry of Production, to assist Sir William Stanier on matters relating to the production and repair of locomotives and wagons by the railway companies. During the temporary absence in 1936-37 of Sir William Stanier as a member of the (Wedgwood) Indian Railway Inquiry Committee, Mr. Symes acted as Chief Mechanical Engineer, L.M.S.R.

Mr. C. Haysey, A.M.I.C.E., District Engineer, Barrow, L.M.S.R., who, as recorded in our May 2 issue, has been appointed District Engineer, Leeds, entered the Engineering Department of the North London Railway in 1904, and was transferred to the London District, L.N.W.R., in 1909, where he remained until 1941, for the last six years of which period he was the Assistant to the District Engineer. During the time he was in the London District he was associated with the electrification of the North London line in the war of 1914-18, and was responsible for the reconstruction of several bridges and buildings and the modernisation of Poplar Docks, with additional responsibility in reconstructing bridges and buildings damaged by enemy action in the recent war. In 1941 Mr. Haysey was appointed District Engineer, Abergavenny; and, in 1945, District Engineer, Barrow. While at Barrow he was responsible for the maintenance of extensive harbour and dock works, the strengthening of coast defence works and the re-building of Whitehaven and Dalton Tunnels.

Mr. S. J. Symes

Lately Chief Stores Superintendent, L.M.S.R., and since seconded to the Ministry of Production, who has retired from L.M.S.R. service

Mr. H. M. Lattimer, Assistant District Superintendent, Newcastle, L.N.E.R., who, as recorded in our February 7 issue, has been appointed District Superintendent, Sunderland, was born in 1906 and educated at Sedbergh School and Corpus Christi College, Cambridge. He joined the L.N.E.R. as a traffic apprentice in 1928. In 1933 he was appointed Assistant Yardmaster, Dunston, and in 1935, Chief Trains Clerk & Chief Controller, Darlington. Two years later he became Chief Clerk, Newcastle District Superintendent's Office, and in 1939, Head of Traffic Section, Divisional General Manager's Office, York. Mr. Lattimer, who had been commissioned in 1938, in No. 1 Docks Group, R.E. (Supplementary Reserve), served during the recent war in France, Egypt, Cyrenaica, Crete and India, and at the War Office, and on demobilisation in 1945 was Railway Representative on the S.H.A.E.F. Mission to the Netherlands. He had been promoted Lt.-Colonel in 1942. After demobilisation he was appointed Assistant District Superintendent, Newcastle.

Mr. L. T. Dawes, Secretary to Beyer, Peacock & Co. Ltd., has been elected a Director, in place of the late Sir F. Stanley Jackson.

We regret to record the death of Mr. James M. Smith, who retired in 1935 from the position of District Goods & Passenger Manager, Aberdeen, L.M.S.R.

L.N.E.R. Appointments

Subsequent to the retirement of Mr. G. H. Skelton, Assistant Accountant, the undermentioned appointments have been authorised:—

Mr. F. H. Sedgwick, Senior Assistant to the Chief Accountant, to be Assistant Accountant.

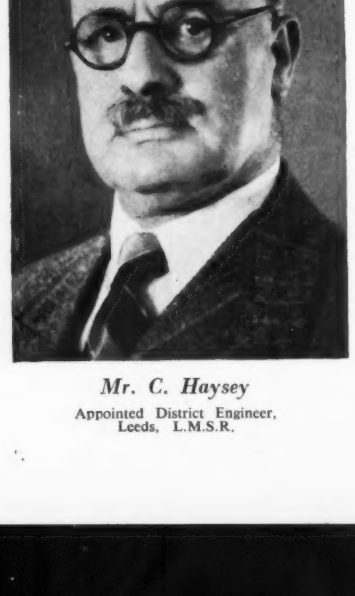
Mr. T. R. Hawkes, Assistant to the Chief Accountant, to be Senior Assistant to the Chief Accountant.

Mr. W. H. Mortlock, Hotels Accountant, to be Assistant to the Chief Accountant.

Mr. G. E. Coverdale, Assistant to the Chief Accountant (Stores), to be Hotels Accountant.

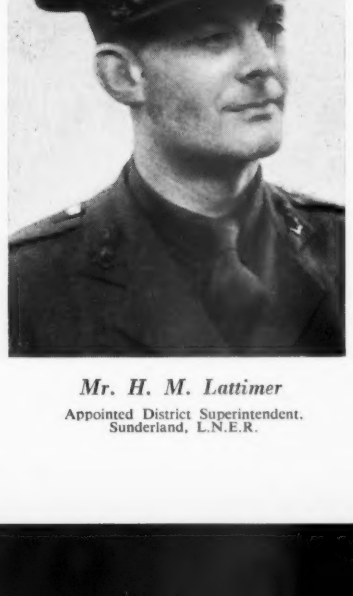
Mr. G. Roberts, Assistant Book-Keeper (Railway Undertakings), to be Assistant to the Chief Accountant (Stores).

Mr. A. G. Roberts, Assistant to Stores Superintendent, Great Western Railway, who, as recorded in our April 11 issue, has been appointed Principal Assistant to Stores Superintendent, entered the company's service at Swindon in 1906 in the carriage and wagon stores, and transferred to the Correspondence Section of the Stores Superintendent's Office in 1911. During the 1914-18 war he served with the York & Lancaster Regiment. In 1924 Mr. Roberts was appointed Chief Clerk at Wolverhampton stores, and five years



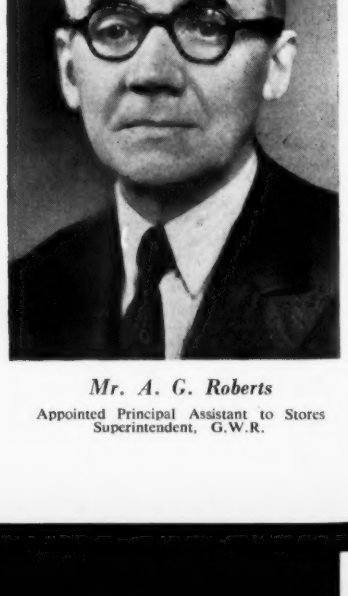
Mr. C. Haysey

Appointed District Engineer, Leeds, L.M.S.R.



Mr. H. M. Lattimer

Appointed District Superintendent, Sunderland, L.N.E.R.



Mr. A. G. Roberts

Appointed Principal Assistant to Stores Superintendent, G.W.R.

later became Storekeeper for the Central Wales Division at Oswestry. He returned to Swindon as Clerk-in-Charge of the Stocktaking & Storage Section in 1933, and was appointed Assistant to the Stores Superintendent in July, 1940.

Mr. E. J. Batchelor has been appointed Assistant Managing Director of Brush Coachwork Limited.

Sir William Stanier (formerly Chief Mechanical Engineer, L.M.S.R.) has been appointed a Director of Courtaulds Limited.

After 47 years at Euston Station, L.M.S.R., Mr. Frank Partington, Passenger Agent and chief of the booking office, retired on May 21. His retirement ends an association with railways which has included eight members of the Partington family.

The Minister of Transport has been informed by the appointing trustees, acting under the provisions of section 1 of the London Passenger Transport Act, 1933, that they have re-appointed Lord Ashfield to be Chairman, and Mr. Geoffrey Heyworth to be a part-time member, of the London Passenger Transport Board.

The British Electric Traction Co. Ltd., which is examining the possibilities of helicopters for air charter work, has appointed Mr. Norman Hill as its Air Adviser. Before joining the R.A.F. during the recent war, Mr. Hill had been Manager, Aircraft Division, Tecalemit Limited, for over ten years, and previously had been on the engineering staff of the Birmingham & Midland Motor Omnibus Co. Ltd.

INDIAN RAILWAY STAFF CHANGES

Mr. W. Oldfield, Chief Mechanical Engineer, B.N.R., has been appointed to officiate as Director, Mechanical Engineering, Railway Board, as from February 18, *vice* Mr. W. G. W. Reid, appointed General Manager, M.S.M.R.

Mr. R. A. Phillips has been appointed to officiate as Chief Mechanical Engineer, B.N.R.

Mr. K. Durai, Director, Projects, Railway Board, returned from leave and resumed his duties as from February 24.

Mr. E. M. Egan, on return from leave, has been appointed to officiate as Chief Commercial Manager, N.W.R.

LUNCHEON TO MR. F. E. HARRISON

On May 21, Mr. F. E. Harrison, who retired from the post of Assistant Chief Engineer, L.N.E.R., on that date, was entertained by his fellow officers to luncheon at the Great Eastern Hotel, Liverpool Street, London. Mr. J. C. L. Train, Chief Engineer, presided over a large gathering, which included Sir Charles Newton, Chief General Manager; Mr. V. M. Barrington-Ward, Divisional General Manager (Southern Area); Mr. A. H. Peppercorn, Chief Mechanical Engineer; Mr. H. W. H. Richards, Chief Electrical Engineer; and Mr. L. C. Glenister, Chief Accountant. The Chairman explained that Mr. Miles Beevor, Chief Legal Adviser, could not be present on account of pressure of Parliamentary business, and then asked Sir Charles Newton to present a fishing rod to Mr. Harrison as a token of the esteem in which he was held by his colleagues. Sir Charles, in an entertaining speech, recounted the main incidents of Mr. Harrison's career, and touched lightly on his love of nature and his prowess as an angler. Mr. R. Bell, formerly Assistant General Manager, added a few details of the engineering work done in the North Eastern region by the Harrison family over a long period of years. In returning thanks, Mr. Harrison spoke of the pleasure he had found in his own railway service, first as District Engineer at Newcastle-on-Tyne, then at York as assistant to the late John Miller, and subsequently as Engineer for the area, and finally as the principal assistant at headquarters.

Mr. G. T. Simpson, Deputy General Manager, Jodhpur Railway, who, as recorded in our March 21 issue, has taken over as General Manager from Mr. C. Gregory Jones, on leave preparatory to retirement, was a traffic pupil with the Great North of Scotland Railway from 1920-22. Mr. Simpson became an Assistant Traffic Superintendent, Bombay, Baroda & Central India Railway, in 1923. In 1926 he transferred to the Jodhpur Railway as Assistant Traffic Superintendent, and thereafter held successively the posts of Deputy Traffic Manager, Chief Traffic Manager and Deputy General Manager.

Rail Output in the U.S.A.

Figures which have just become available in the annual statistical report of the American Iron & Steel Institute for 1945, indicate that the production of rails in the United States was relatively high in that year, with a total of 2,417,520 net short tons of 2,000 lb. This is slightly lower than the high figure of 1944, in fact, showing a drop of 2·9 per cent. The decrease marks the first break in the six-year succession in which rail production has registered a gain over the preceding year. Although the total was substantially higher than the annual production in any of the 14 years preceding 1944, it compares unfavourably with the production of rails in the years 1929 and 1927, when 3,048,795 and 3,143,264 net tons, respectively, were produced.

The production of rail in 1945 and in previous years back to 1927 is shown in the accompanying table, in which the output for each year is divided into four weight groups. Production in all weight groups in 1945, with the exception of the heaviest, fell off from the preceding year, and the greatest output continued to remain in the two heaviest weight groups, amounting to 79·2 per cent. of the total. In the group of 100 lb. and less than 120 lb., the drop in production was 4·6 per cent.; in the group of more than 60 lb. and less than 100 lb., the decrease was 12·6 per cent.; and in the group of 60 lb. or less production fell 7·5 per cent.

Of the total tonnage of rails produced in 1945, 2,350,686 tons, or 97·2 per cent., were rolled from open-hearth steel. This percentage is the same as for the preceding year.

Only 5,835 tons of rails were rolled from Bessemer and electric steels during 1945, a drop of 59·1 per cent. compared with the 14,261 tons rolled in 1944, making this the second successive year in which tonnage in this category has shown a decrease from the preceding year, in contrast with the tendency to increase that prevailed before 1944.

Great Western Railway First-Aid Competition

First-aid competitions on the Great Western Railway have been resumed this year on a pre-war basis. Competitions were held in each of the 17 divisions, and the semi-final eliminating rounds took place at Bristol, Newport, and Birmingham.

The first eight teams in the semi-finals competed in the final competition at Paddington in tests set by Major A. C. White Knox, of London, and Dr. G. S. Phillips, of Neath. The presentation of trophies and prizes was presided over by Viscount Portal, Chairman of the company, supported by Sir Edward Cadogan, a Director, and a number of chief officers. The result of the contest was announced by the Centre Secretary, Mr. P. Anstey, as under:—

	Marks (maximum 300)
Swindon	202
Directors' Shield and Prizes	
Cardiff Docks	188
Reading	178
Stafford Road	154
Newport High Street	153½
Taunton	140½
Weymouth	131½
Old Oak Common Locomotive ...	123½

Before the presentation by Lord Portal of medals and certificates for exceptionally efficient first aid rendered by members of the staff during 1946, Dr. H. H. Cavendish Fuller, Chief Medical Officer, commented on the work of the recipients.

A vote of thanks to the adjudicators was proposed by Sir Edward Cadogan, and replied to by Major White Knox, who congratulated the teams on the excellent standard attained, and Dr. Phillips. The proceedings were brought to a close by a vote of thanks to the Chairman proposed by Mr. G. S. Hodder, Divisional Ambulance Secretary, Bristol.

The Swindon and Cardiff Docks teams will represent the Great Western Railway in the inter-railway first aid competition at the Borough Polytechnic, London, on June 20.

U.S.A. RAIL PRODUCTION IN NET SHORT-TONS OF 2,000 LB.

Years	60 lb. or less	Over 60 lb. and less than 100 lb.	100 lb. and less than 120 lb.	120 lb. and over	Total
1927	*181,256	†798,226	1,472,155	691,627	3,143,264
1928	*150,301	†662,053	1,348,199	804,639	2,965,192
1929	*158,326	†574,080	1,381,631	934,758	3,048,795
1930	*107,101	†391,079	935,756	664,085	2,098,021
1931	*56,100	†166,793	555,242	518,546	1,296,681
1932	*18,654	†47,374	240,902	143,944	450,874
1933	55,010	63,153	172,488	175,601	466,252
1934	78,495	101,640	550,639	400,677	1,131,451
1935	63,982	112,431	381,696	238,812	796,921
1936	107,644	135,585	684,910	438,089	1,366,228
1937	113,889	218,374	815,280	471,685	1,619,228
1938	50,375	85,117	371,534	190,556	697,642
1939	92,994	83,611	620,992	515,050	1,312,647
1940	140,443	339,672	688,109	510,782	1,678,986
1941	172,264	323,968	820,695	610,924	1,927,851
1942	124,938	438,562	924,851	607,808	2,096,159
1943	164,096	364,715	847,839	750,346	2,126,996
1944	162,942	410,213	1,032,256	894,245	2,490,656
1945	150,724	350,499	985,310	930,987	2,417,520

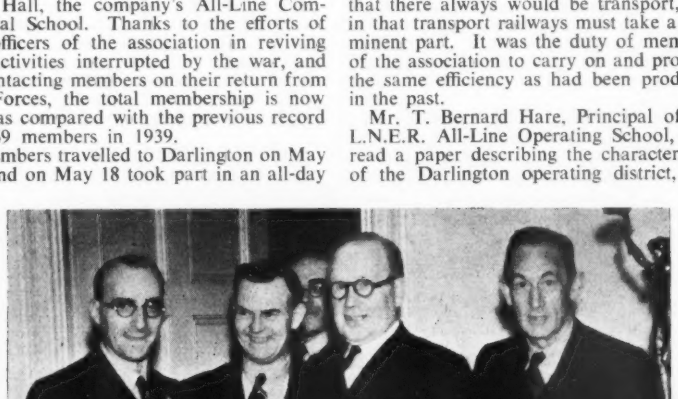
* Under 50 lb. † 50 lb. and less than 100 lb.

Railway Students' Association Annual Convention

First post-war convention held at Darlington

The first post-war convention of the Railway Students' Association, London School of Economics & Political Science, was held in Darlington from May 17 to 21. It was attended by 42 members, who were accommodated at Grantly, the L.N.E.R. All-Line Operating School, and at Faverdale Hall, the company's All-Line Commercial School. Thanks to the efforts of the officers of the association in reviving the activities interrupted by the war, and in contacting members on their return from the Forces, the total membership is now 585, as compared with the previous record of 469 members in 1939.

Members travelled to Darlington on May 17, and on May 18 took part in an all-day motorcoach tour to the Roman camp of Borcovicum on Hadrian's Wall, returning to Darlington *via* Durham, where the cathedral was visited.



Sir Charles H. Newton, Chief General Manager, L.N.E.R., and President of the association, at the opening of the convention. Mr. T. Bernard Hare, Principal of the L.N.E.R. All-Line Operating School, is on the right; and Mr. S. E. Bellamy, General Secretary of the association, on the left

Photo] ["The Northern Echo"

Sir Charles H. Newton, Chief General Manager, L.N.E.R., and President of the association, presided at the opening meeting of the convention at Grantly on May 19. In declaring the convention open, Sir Charles Newton said it was a matter of great gratification to him that the revival of the association's activities had brought the first post-war convention to Darlington. He ventured to claim that the L.N.E.R., no doubt inheriting N.E. tradition, had been well to the fore in technical education and training. Railway operation was partly scientific and partly a matter of sheer commonsense. He thought in the past they had been prone to look too much on the commonsense side of it, but nowadays they were trying to develop the scientific side of railway operation, and were leaving it to the railway selection boards to produce men of sound commonsense.

They were meeting in peculiar circumstances, on the eve of transport nationalisation. They felt how very tragic it was that the names of the old companies were to disappear, and the whole of the transport of the country was going to be run by supermen. Where the Government would turn for these supermen he did not know, but they would not find any in this world; he wondered where they would look for them, in the world above or the world below. They had got to realise that there always would be transport, and in that transport railways must take a prominent part. It was the duty of members of the association to carry on and produce the same efficiency as had been produced in the past.

Mr. T. Bernard Hare, Principal of the L.N.E.R. All-Line Operating School, then read a paper describing the characteristics of the Darlington operating district, and the manner in which its present boundaries were arrived at. His paper is the subject of an editorial note on page 549. A vote of thanks to Mr. Hare was moved by Sir Charles Newton.

At the end of the meeting, members were received by the President. Mr. Gilbert J. Ponsonby, Lecturer on Transport, London School of Economics, proposed the toast of Sir Charles Newton at the luncheon which followed. The toast of the visitors was proposed by Mr. T. Wing, Acting Chairman of the association, and a reply was made by Mr. R. A. Smeddle, Mechanical Engineer, Darlington, L.N.E.R. Sir Charles Newton proposed the toast of their host, Mr. T. Bernard Hare.

In the afternoon, the members attended a reception by the Mayor of the Borough of Darlington, Councillor J. Alsop. The Mayor, in welcoming the visitors, recalled the conversations at Darlington between Edward Pease and George Stephenson that led to the adoption of steam traction on the Stockton & Darlington Railway. George Stephenson founded a locomotive works at Newcastle, and in later years the firm of Robert Stephenson moved to Darlington, where its first locomotive was built in 1902. The fact that Darlington was a railway centre must have played a large part in its prosperity. He wished Sir Charles Newton good health for many years to enjoy his well-earned retirement, and congratulated him on his appointment to the board of the L.N.E.R.

Sir Charles Newton replied on behalf of the association, and said that relations between the corporation and the L.N.E.R. hardly could be closer. Many members of the company had been associated with the Council. It was very fitting that in this town they should have formed their own schools for teaching railway operation.

The evening was occupied by a visit to Middlesbrough, and a trip in an L.N.E.R. tug along the River Tees estuary. The party travelled to and from Middlesbrough by the regular-interval train service operating between Darlington and Saltburn.

The meeting on Tuesday was held at Faverdale Hall, with Mr. O. H. Corble, Assistant General Manager, Ancillary Services, L.N.E.R. presiding. Mr. Corble said it was a special pleasure for him to attend the meeting, because he could claim to be among the founders of their association, having represented the G.N.R. students in 1909-10 on what he thought was the first committee for the purpose of founding the association. It was also a great pleasure to have the privilege of listening to a paper by Mr. H. F. Sanderson, his old friend and colleague.

A paper entitled "The Transport Requirements of the Heavy Industries" was then read by Mr. H. F. Sanderson, Principal of the L.N.E.R. All-Line Commercial School. The paper is referred to in an editorial note on page 550.

A vote of thanks to Mr. Corble for presiding at the meeting was moved by Mr. T. Wing. In his reply, Mr. Corble said that he owed such success as he had achieved to the London School of Economics and the Railway Students' Association for the manner in which a theoretical background and practical knowledge of railway operation had been combined.

The visit to the Consett Works in the afternoon was made by motorcoach. In touring the various installations, the party was shown numerous instances of the close co-operation existing between the Consett Iron Company and the L.N.E.R. in handling the inwards ore traffic and the outwards flow of products from the works.

On May 21 the party travelled by rail to Newcastle where a conducted tour was made of the Central Station and Forth goods depot. The No. 1 and No. 3 signal boxes were visited, and an inspection was made of the electric rolling stock used on the North Tyneside regular-interval services. The party was received at Newcastle by Mr. L. Sproat, District Superintendent, Mr. A. S. Buswell, District Passenger Manager, and Mr. W. P. Allen, District Goods Manager.

At a luncheon after the visit, Mr. H. Bailey, Hon. Treasurer of the association, moved a vote of thanks to Mr. Buswell and all who had been concerned in carrying out the arrangements.

After lunch the party proceeded by train to Monkseaton, and from there by motorcoach to the Tyne Commission Quay, where, under the guidance of Mr. A. W. Ward, Traffic Manager of P. H. Matthiessen & Co. Ltd. (Agent of the Bergenske Line), an inspection was made of a motor vessel used on the Newcastle-Bergen services.

The return was made by motorcoach along the coast road through Tynemouth and Whitley Bay, and at Newcastle the party joined the 3.56 p.m. train for the homeward journey to Kings Cross.

The Transport Bill in the House of Lords

Lord Portal outlines some practical problems

In our last week's issue we gave a summary of the discussion during the first day's debate in the House of Lords on the Second Reading of the Transport Bill.

The speeches then given necessarily were dealt with rather briefly, because they took place shortly before we went to press. In view of a number of pertinent arguments which were adduced by Lord Portal in the course of his speech, we are reproducing below at greater length certain sections of it.

Lord Portal, in the course of his speech, said that the annual allocation at the present time for railway maintenance and renewals could not be spent because it was not possible to get materials for the purpose. Members of the House of Lords knew as well as he did of the limitation of coal which was cutting down the number of trains, the limitation of timber which was restricting the renewal of sleepers, and other limitations on the repair of the permanent way and of locomotives, and so on. The question of finance for the next four or five years was not a matter which could be raised, because at the present time the limiting factors were materials and manpower.

He doubted whether the Government appreciated the magnitude of the task to be carried out by the end of this year if the railways were to be vested in the Commission on January 1 next.. The companies would then cease to exist as separate entities except for the purpose of winding up, and new arrangements would have to be made to carry on the functions now performed by the directors; for example, decisions of policy, and the constant review of operations, sanctioning of expenditure, letting of contracts, signing of documents, payment of accounts, appointment of staff, increase of salaries, and so on, all would have to be dealt with before January 1. The Commission would also be faced with many problems when it was framing schemes for the delegation of the functions to the various executive bodies.

Largest Hotel Owners

The railways were the largest hotel owners in the country. Who was to be responsible for the control of the hotel and refreshment business? Apparently, the Government had decided that there was no need to set up the proposed Hotels Executive concurrently with the other Executives. Presumably, the railway companies road collection and delivery services, and also their wholly-owned subsidiary road haulage companies, would come under the control of the Road Executive.

If so, would the railway staff concerned cease to be treated as railwaymen and come under the same conditions as the staff engaged in the subsidiary road haulage undertakings? Those were all points which people did not realise. Similar questions arose in connection with the dock and canal staff, who would, presumably, come under control of the Docks & Inland Waterways Executive.

The activities of the wholly-owned railway subsidiary companies covered a wide field, and their position would require careful consideration. Was it the intention of the Government that the Commission should dispose of all such undertakings or parts of undertakings whose activities were not essential to the provision of a co-ordinated system of transport?

Take, in particular, the business of Thomas Cook & Son Ltd. It had world-wide ramifications and competed with many tourist agencies throughout the country. When the railways acquired Thomas Cook & Son Ltd., they had to give the Government an assurance that they would not discriminate in their treatment of existing agencies, whether railway-owned or otherwise, and that any dispute, if necessary, would be referred to arbitration.

What would be the position of outside tourist agencies if the Government took over Thomas Cook & Son Ltd., and Dean & Dawsons? Would the same assurances be asked of the Government as were asked of the railway companies when they took them over?

Conditions of Service

Other questions which would have to be determined before the end of the year were the terms and conditions under which new staff were to be appointed. The conditions of service, pensions, travelling facilities, promotion arrangements, etc., were not identical on all railways. Was it proposed to introduce standard conditions for new entrants, or how would they be dealt with? These were only some of the preliminary problems which would have to be dealt with before the end of this year.

When the debate was resumed on Wednesday, Lord Nathan described the measure as "an amalgamation of businesses on the largest scale."

Referring to the Commission which was to be set up under the Bill, he said that it would not actually run the railways or the transport or any of the services taken over, although the whole right to do so would be concentrated in it by the terms of the Bill. It would delegate those powers to Executives to be appointed with specific functions. The position of the Executives would be analogous to that of General Managers.

Lord Balfour of Burleigh said that he had had the good fortune to be connected with one of the main-line companies for a number of years. "As a director, therefore, I have to say today, *moriturus vos saluto*."

He went on: "I would relinquish my seat on the board of the railway, and, in particular, I would relinquish that prized possession my railway pass without regret if I felt that the interests of the service and the country would thereby be promoted.

"The introduction of this Bill in present circumstances is a real tragedy. An immense opportunity lies before us in the realm of transport at the present time, and the opportunity is there for two reasons which have nothing to do with the existence of a Socialist Government.

"They are: First, that there is now for the first time a general realisation throughout the country that an efficient railway system is essential to this country in peace as in war. It is now admitted by the most fanatical road haulier that the railways should not be left to be murdered by unrestricted road competition tied and bound as they are by statutory obligations, imposed in the interests of the public long ago.

"Second, for the first time the organisation of road transport is reaching a stage of development when it can be treated as an entity. The tragedy of this Bill is not only that it will not produce an efficient transport service, but that it will prevent an efficient system from ever coming into existence."

A defect in the Bill was that there was no provision in the new structure for anything equivalent to the work done by the Railway Boards. The Railway Executive of 9 would be swamped by office work from the very beginning.

Lord Lucas, supporting the Bill, said that he had great doubts whether the railway system of this country, organised as it was now and standing as an economic unit without a subsidy, would ever again be profit-bearing.

Lord Simon said he wanted to know what would be the future of the Thomas Cook agency, the shares of which were taken over by the railways during the war, when there was no tourist travel.

Viscount Addison, Leader of the House, replying to the debate, suggested that if the Commission to be set up under the Bill thought it worth while, it would retain in its control the Thomas Cook agency. He hoped the Commission would do much better than the railway companies had done in regard to catering for foreign tourists.

The Second Reading of the Bill was carried without a division.

Parliamentary Notes

L.M.S.R. Bill

Petitions against the London Midland & Scottish Railway Bill have been withdrawn by Bolton Corporation; Imperial Chemical Industries Limited; Lancashire County Council; Kearsley Urban District Council; and Little Lever Urban District Council.

L.N.E.R. Bill

The West Riding County Council has withdrawn its petition against the London & North Eastern Railway Bill.

The Bill has now been referred to the Committee on Unopposed Bills.

Southern Railway Bill

The Southern Railway Bill was read the third time and passed in the House of Lords on May 14.

Forth Road Bridge Order Confirmation Bill

The Forth Road Bridge Order Confirmation Bill received the Royal Assent in the House of Lords on April 29.

Questions in Parliament

Revenue from Increased Fares

Major D. W. T. Bruce (Portsmouth, North—Lab.) on May 12 asked the Minister of Transport whether he would state the approximate sum of extra revenue accruing to date to the transport undertakings concerned as a result of the passenger fare increases approved by him during the past fiscal year.

Mr. Alfred Barnes (Minister of Transport): The amount of additional receipts resulting from the increases in passenger fares introduced on the main-line railways and the Green Line coaches on July 1, 1946, and on the road and rail services of the London Passenger Transport Board on February 9, 1947, was approximately £14 million up to April 27 last.

Major Bruce: Will the Minister give an assurance that no part of this increase is going towards the advertising campaign of the railway companies and road hauliers on the subject of nationalisation, and if so, can he give any idea where

the quarter of a million pounds is coming from for that purpose?

Mr. Barnes: I cannot determine how railways distribute their dividends. Later on, of course, that will not arise.

Mid-Week Travel

Major A. L. Symonds (Cambridge—Lab.) on May 12 asked the Minister of Transport if railway fares would be reduced for mid-week travel during the holiday season, to prevent congestion at week-ends.

Mr. Alfred Barnes: No.

Fishguard—Rosslare Steamship Service

Mr. John Lewis (Bolton—Lab.) on May 19 asked the Minister of Transport when the shipping service between Fishguard and Rosslare would be resumed.

Mr. Alfred Barnes stated in a written answer: The Great Western Railway steamship service will be re-opened on May 23, with three round trips per week. It will be increased to six sailings a week as soon as a new steamer now nearing completion is brought into service.

Railway Employees' Savings Banks

Major E. A. H. Legge-Bourke (Isle of Ely—C.) on May 12 asked the Minister of Transport what would be the effect of the Transport Bill on railway employees' savings banks, especially regarding trusteeships, powers to invest deposits, persons entitled to make deposits, the rate of interest payable on deposits, and the presentation of accounts.

Mr. Alfred Barnes: The Commission will inherit precisely the same rights and liabilities as the railway companies now possess. While the Commission would have no power to abrogate any rights of depositors, it will no doubt wish to consider whether as a matter of long-term policy the facilities for saving by its staff should not be assimilated to those provided by the National Savings movement.

Major Legge-Bourke: Did the Minister consult the National Union of Railwaymen and other unions on this matter before the Transport Bill was presented?

Mr. Barnes: Not before the Transport Bill was presented, but later, yes.

Reserved Compartments

Squadron-Leader Sir Gifford Fox (Henley—C.) on May 19 asked the Minister of Transport why, on March 29, on the 9.15 a.m. train from Paddington to Gloucester, one compartment, reserved for the Minister of Agriculture, had been left unoccupied in a full train.

Mr. Alfred Barnes stated in a written answer: A compartment was reserved for the Minister of Agriculture. Unfortunately, due to a misunderstanding, he was given a seat elsewhere on the train, and the reservation label was not removed until Reading.

Squadron-Leader Sir Gifford Fox on May 19 also asked the Minister of Transport why, on March 29, on the rear of the Bristol train from Paddington which left Reading at approximately 9.50 a.m., two adjoining first class compartments had been marked as reserved, one having on the outside window "Movement Control" with a red crown above and occupied by one man, and the other having a label "Admiralty," but empty.

Mr. Alfred Barnes, in a written answer, stated: The single occupant of one compartment was an Admiralty courier travelling in charge of bags containing official documents. The second compartment was reserved for the Admiralty under standing instructions relating to members of the Board of Admiralty and Naval commanders-in-chief travelling on duty when Service matters are to be under discussion during the journey. As the reservation was not taken up the label should have been removed. I have these instructions under review.

Cheap Tickets

Mr. E. H. Keeling (Twickenham—C.) on May 19 asked the Minister of Transport if he would introduce cheap tickets by electric trains on Sundays for the benefit of Londoners who could not avail themselves of the mid-week cheap fares.

Mr. Alfred Barnes, in a written answer, stated: No. Any such measure would be likely to attract a big increase in traffic for which even on suburban services neither the staff nor the fuel is available at present.

Oil-Burning Locomotives

Mr. F. J. Erroll (Altrincham & Sale—C.) on May 19 asked the Minister of Transport how many locomotives had been fully converted to oil firing on British railways; how many were in use by each of the main-line companies; how many were out of service awaiting conversion; and what was the present total figure for the entire conversion programme.

Mr. Alfred Barnes stated in a written answer: Twenty-three locomotives have so far been equipped for oil burning, nineteen on the G.W.R., one each on the L.N.E.R. and L.M.S.R., and two on the Southern Railway. Eight are at present undergoing conversion. It is proposed eventually to equip in all 1,229 engines.

Reserved Sleeping Berths

Lt.-Colonel Sir Thomas Moore (Ayr Burghs—C.) on May 19 asked the Minister of Transport what was the reason for continuing the system of reserving sleeping cars for Government-sponsored passengers in peacetime.

Mr. Alfred Barnes: The number of travellers requiring sleeping berths is considerably in excess of those available. Limited numbers are therefore reserved on certain routes for Ministers, Members of Parliament, business men, and others who are travelling at short notice on important national business and who are not free to travel by day.

Sir Thomas Moore: When is the ordinary citizen, not the very important person, who is engaged on his normal lawful activities, to get back his ordinary rights, of which this is one?

Mr. Barnes: I have given figures to the House on previous occasions to indicate that only 6 per cent. of the third class berths are now reserved, and 22 per cent. of the first class berths on certain routes. Of the first class berths, 64 per cent. of the reservations are taken up by business and professional persons.

Railway Coal Wagons

Wing-Commander Roland Robinson (Blackpool, South—C.) on May 12 asked the Minister of Transport (1) what were the types of the 50,000 16-ton steel railway wagons which had recently been ordered by his department; and (2) whether, in all future orders of railway wagons for the transport of coal, he would abandon the old-fashioned hand-unloading flat-bottom wagons and replace them with bottom-discharge self-trimming hopper-shaped wagons as used in the U.S.A., so as to minimise labour costs and speed delivery.

Mr. Alfred Barnes, in a written answer, stated: The 50,000 wagons ordered by my department are of the open mineral type, rectangular and flat-bottom, with one end, two side, and two bottom doors. The specification admits of welded or of riveted construction, or a combination of both, to suit the capacity of individual manufacturers. It is not practicable to provide for all coal-carrying wagons to be of the hopper type. Much coal in this country is unloaded in station yards by private merchants direct to road vehicles, and so long as this continues it will be necessary to retain the present standard type of wagon.

Railway Traffic Officers

Captain John Crowder (Finchley—C.) on May 6 asked the Secretary of State for War the number of railway transport officers and their staff employed in each of the London main-line railway stations.

Captain F. J. Bellenger (Secretary of State for War): As the answer contains a number of figures I will circulate it.

Captain Crowder: Would it be possible to revert to the peacetime practice of commanding officers and adjutants arranging for moving of their formations without a very large staff of railway transport officers?

Captain Bellenger: The figures will show that there is not a large staff of railway transport officers. Considering that they had to deal with more than one million inquiries in the first quarter of this year, I hope Captain Crowder will find that the staff disclosed in my answer is very economical.

Later Captain Bellenger circulated the following answer:—

The numbers of railway traffic officers and their staffs now employed in the London main-line railway stations are as follow:—

Station	Railway traffic officers	Other ranks
Liverpool Street ...	2	8
Fenchurch Street ...		
London Bridge ...		
Cannon Street ...		
Kings Cross ...	3	14
St. Pancras ...		
Victoria, including Caterham ...	3	10
Waterloo		
Charing Cross ... including Woolwich Arsenal Holborn Viaduct ... Brookwood ...	3	15
Euston	2	11
Paddington... ... including Marylebone ... Addison Road ... Windsor	2	8
Totals: 18 Stations	15	66

Children's Railway Tickets

Major A. L. Symonds (Cambridge—Lab.) on May 12 asked the Minister of Transport if he was now in a position to make a statement concerning the adjustment of the age limit for children's tickets on the railways to correspond with the school-leaving age.

Mr. Alfred Barnes: Not yet. It is necessary to consider this matter in relation to the general financial position of the railways, about which I have answered another question.

Major Symonds: Can the Minister say how soon we may expect an answer on this matter, as it affects the summer holidays and is causing muddle and anxiety to persons who are trying to spread over their summer holidays?

Mr. Barnes: Major Symonds knows that this is for general casual travel and not for travel for education purposes, and, in view of the figures I have given previously, I am afraid that I must consider this in relation to other financial problems of the railways.

SS. "Arnhem" Inaugural Cruise Luncheon

Baron A. W. C. Bentinck, Captain H. Pickering, and Sir Ronald Matthews on the bridge of the "Arnhem"

At a luncheon during the inaugural cruise of the ss. *Arnhem* on Thursday of last week, Capt. J. S. S. Litchfield-Speer, R.N., Senior Officer, Reserve Fleet, H.M.S. *Tyne*, proposing the toast of the *Arnhem*, said that the Navy and the L.N.E.R. had a great deal of mutual interest in Parkeston Quay, and it was quite likely that the L.N.E.R. might feel that the Navy was hanging on to it too long. On the other hand the contacts continued to be mutually happy, and he trusted that the time would soon arrive when the Navy would no longer impede the services of the L.N.E.R., whose new ship had given a fine impression to him as a sailor.

Capt. H. Pickering, Master of the *Arnhem*, in reply, said it was encouraging to see a job so well done as the *Arnhem*. The builders of the *Arnhem* had built the *Queen Mary* and *Queen Elizabeth*.

Baron A. W. C. Bentinck, Minister-Counsellor of the Royal Netherlands Embassy, proposing the toast of the L.N.E.R., said that, as one who had travelled on this route, on many occasions, he congratulated the company on this new ship.

Sir Ronald W. Matthews, Chairman of the L.N.E.R., in response, said that the L.N.E.R. was justly proud of the unbroken tradition which had been maintained ever since 1863 by the Harwich Continental services. The history of the Harwich packets was a long and fascinating one. In view of current events in the political field, it was interesting to note that in the reign of William III, the Government of the day had dabbled in transport to the extent of providing some small sailing vessels to carry the mails, run under Post Office auspices.

With the passage of the years, however, Governments had realised that so vital a service as the maintenance of communications between England and Holland was better left to be developed by the enterprise of British shipowners—in fact to *private* enterprise. In the last century the initiative of the railways had started a steamer service associated first of all with the Eastern Counties Railway, then with the G.E.R., and lastly with the L.N.E.R.

The first step had been taken in 1860, when the Eastern Counties Railway Company appointed as its Dutch Agents the Rotterdam firm of Hudig and Pieters, who still held this position, and with whom the L.N.E.R. had had so long and friendly a collaboration. In 1863 a service of railway steamers from Harwich to Rotterdam had come into being.

Among those present were:—

Directors

Sir Ronald Matthews, Chairman, Mr. W. K. Whigham, Deputy-Chairman, and Mr. G. H. Kitson, Sir Samuel Strang Steel, Mr. A. K. McCosh, Colonel Sir Harold Mitchell, Directors, L.N.E.R.; the Hon. Charles McLaren, Director, John Brown & Co. Ltd.; the Hon. W. L. Runciman, Chairman, Moor Line Limited and Walter Runciman & Co. Ltd.

Officers

Sir Charles Newton, Chief General Manager, and the following officers, of the L.N.E.R.: Messrs. Miles Beevor, Chief Legal Adviser, E. Coleby, Chief Assistant Solicitor, O. H. Corble, Assistant General Manager (Ancillary Services), J. Ness, Assistant General Manager (Works & General), H. H. Halliday, Assistant General Manager (Staff), V. M. Barrington-Ward, Divisional General Manager (Southern Area), W. H. Johnson, Secretary, E. A. W. Dickson, Assistant Secretary, J. E. M. Roberts, Passenger Manager, N. E. Area, L. H. K. Neil, Continental Traffic Manager, C. Keep, Traffic Assistant to Continental Traffic Manager, George Dow, Press Relations Officer, F. H. Colebrook, Purchasing Agent, G. B. Barton, Assistant Chief Engineer, J. I. Campbell, Engineer (London), J. R. Dallmeyer, District Engineer, Ipswich, N. McK. Jesper, Chief of Police (Southern Area), G. C. Gold, Mechanical Engineer (Stratford), L. P. Parker, Locomotive Running Superintendent, Eastern Section (Southern Area), G. A. Musgrave, Locomotive Running Superintendent, Western Section (Southern Area), M. R. Bonavia, Assistant to Chief General Manager (Public Liaison), E. K. Portman-Dixon, Superintendent of Refreshment Room Services & Canteen Superintendent, A. A. Ryan, Hotels Superintendent (Southern Area), Captain R. Davis, Marine Superintendent (Parkeston), Mr. J. E. M. Payne, Marine Superintendent Engineer (Parkeston), Captain H. J. Perry, Marine Superintendent (Scottish Area), Captain H. Pickering, Master, ss. *Arnhem*.

Messrs. H. W. R. Ogram, General Manager, Associated Humber Lines and Wilsons & North Eastern Railway Shipping Co. Ltd.; R. H. Hacker, Continental Superintendent, Southern Railway; L. W. Conibear, Commercial Assistant to Superintendent of the Line, Great Western Railway.

Others

Baron A. W. C. Bentinck, Minister-Counsellor, and Mr. Th. H. de Meester, Consul-General, Netherlands Embassy in London; Captain J. S. S. Litchfield-Speer, R.N., Senior Officer, Reserve Fleet, H.M.S. *Tyne;* Sir Eric Studd; Messrs. J. A. Kay, Editor, *The Railway Gazette;* J. P. Taylor, Editor, *Shipbuilding & Shipping Record;* D. R. Lamb, Editor, *Modern Transport*; E. W. Wimble, Secretary & General Manager, Workers' Travel Association; C. Garstang, Ocean Travel Manager, Thos. Cook & Son Ltd.; Alderman R. A. Ward; Messrs. R. Solum; F. C. C. Stanley; G. Luthman; Dr. J. R. Hetherington; Messrs. C. Holt; B. W. Boddy; O. Holdthusen; N. Parish; H. T. Parkin; G. M. Leach; H. R. Carter; H. Elliott; R. Taylor; J. Noest; Alderman J. E. Cann; Messrs. H. H. Gardiner; Frank Mason; A. C. Hardy; C. C. Palmer; R. Kendall; W. Creighton; H. Joslin; W. W. Wingfield; A. Richardson; J. Allison; C. W. J. Miller; D. Pollard; R. W. Wright; H. Wood; A. L. Pepper; C. Archer; G. R. Hutchinson; J. Taylor; W. S. Dawson; A. McIntosh; A. B. Purbrick; R. K. Leeper; G. E. Atkinson; G. Bryant; A. J. Thorn; S. E. Edwards.

Sir Ronald Matthews, with Baron A. W. C. Bentinck and Mr. W. K. Whigham, at the luncheon

Notes and News

Mersey Docks (Increase of Charges).—The Minister of Transport on May 3 made the Mersey Docks (Increase of Charges) Order, 1947.

Great Indian Peninsula Railway Annuities.—It has been notified that on May 1, 1947, a total sum of £29,003,237 5s. 6d. was invested for the purpose of providing a sinking fund in respect of the annuities class "B."

Footbridge at Bedford, L.M.S.R.—To improve facilities for the travelling public, the L.M.S.R. is providing a footbridge at the Bletchley end of Bedford St. John's passenger station, on the Oxford-Cambridge line.

Eastern Bengal Railway Annuities.—It has been notified that on March 31, 1947, a total sum of £1,137,936 12s. 4d. was invested for the purpose of providing a sinking fund in respect of the annuities class "B."

L.P.T.B. (Extension of Time) Order.—The Minister of Transport has made the London Passenger Transport Board (Extension of Time) Order, 1947 (S.R. & O., 1947, No. 810). Copies may be obtained from the Clerk of Stationery, Ministry of Transport, Berkeley Square House, London, W.1, price 1d. (post free 2d.).

Saving Fuel at L.N.E.R. Depots.—In order to save fuel, sawdust stoves have been installed at various points on the L.N.E.R., and at Guide Bridge the saving in coal and coke amounts to 1½ cwt. a day. In the Kings Cross district a considerable saving has been effected by the provision of thermostatically controlled automatic stokers in all large installations.

Hunslet Locomotive for Bolivia.—An order has been received by the Hunslet Engine Co. Ltd., Leeds, from the Peruvian Corporation Railways for a 2-8-0 metre-gauge locomotive for the Guaqui-La Paz Railway in Bolivia. The locomotive will have cylinders 16½ in. by 24 in. and will weigh about 47 tons with tender. The steepest section of the Guaqui-La Paz Railway, with a gradient of 1 in 14 located more than 10,000 ft. above sea level, has been worked for the past seven years by a Hunslet straight diesel locomotive.

Gleneagles Hotel Re-opened.—After being used for six years as a convalescent centre, Gleneagles Hotel, one of the best known of the Scottish hotels of the L.M.S.R., re-opened on May 23. The two famous golf courses are now available for play, and it is hoped that the Queen's course, only 9 holes of which are in play at present, will be fully open for the 1948 season. Among the numerous requests for bookings already received are a number from Americans who were guests at the hotel before the war.

British Electric Traction Co. Ltd.—The revenue of the British Electric Traction Co. Ltd. for the year ended March 31, 1947, amounts to £823,261, compared with £795,422 for the year ended March 31, 1946. After deducting general expenses, etc., and debenture stock interest; and providing £305,005 for taxation (against £316,350); there remains for appropriation (subject to audit) the sum of £365,992, compared with £337,562 for the previous year. The directors recommend the payment of the following final dividends, less income tax, for the year ended March 31, 1947: 5 per cent. on the participating preference stock (making, with the interim dividend of 3 per cent. already paid, 8 per cent. for the year); 4 per cent. on the preferred ordinary stock (making, with the interim dividend of 4 per cent. already paid, 8 per cent. for the year); and 35 per cent. on the deferred ordinary stock (making, with the interim dividend of 15 per cent. already paid, 50 per cent. for the year). This leaves £58,819 to be transferred to undivided profits account. The ordinary general meeting will be held on June 20.

Cammell Laird & Co. Ltd.—Net profit for 1946 amounted to £374,077, as compared with £220,595 in 1945. After adding £127,464 brought forward from 1945, the total sum to the credit of the profit and loss account is £501,541. A dividend of 4 per cent. was paid on the ordinary stock on October 5 last year, leaving a balance of £462,491. A final dividend of 8½ per cent. (less income tax), together with a bonus of 3 per cent. (free of income tax) is recommended on the ordinary stock. After meeting these charges and transferring £200,000 to general reserve, the carry-forward to the current year is £462,491. The report shows that net profits of the Metropolitan-Cammell Carriage & Wagon Co. Ltd. for 1946 rose from £89,855 to £113,710, and that after increasing the dividend from 9 per cent. to 10 per cent. (free of tax), there remains £73,760 to be carried forward, as compared with £60,081 brought in.

Iron and Steel Production.—Statistics issued by the British Iron & Steel Federation show that production of steel ingots and castings, which dropped from an annual rate of 12,470,000 tons in January to 10,190,000 tons in March, due to the fuel crisis, rose to a ratio of 12,294,000 tons a year in April. This level of steel output was only achieved, it is stated, by depleting stocks of steel-making materials, especially pig-iron, and can only be maintained if supplies of coking coal improve. Some comparative figures are given below:—

PIG IRON

000's of tons

	1946		1947	
	Weekly average	Annual rate	Weekly average	Annual rate
January	144	7,465	150	7,806
February	146	7,599	126	6,560
March	147	7,660	123	6,400
April	149	7,732	139	7,238

STEEL INGOTS AND CASTINGS

000's of tons

	1946		1947	
	Weekly average	Annual rate	Weekly average	Annual rate
January	229	11,887	240	12,470
February	247	12,854	206	10,726
March	256	13,295	196	10,190
April	252	13,111	236	12,294

British Wagon Co. Ltd.—In a statement presented with the report and accounts of the British Wagon Co. Ltd. for 1946, the Chairman, Mr. W. H. Copley, said that there had been a big increase in the volume of business for the year. Important activities upon which he had touched briefly at the last meeting represented a sum which was considerably in excess of that due to the company's railway wagons. Having foreseen a time when railway wagons and certain heavy haulage vehicles would pass from the company's ownership, the directors had explored other avenues for hire-purchase. They now had large interests in tools of industry of all descriptions, and would continue to expand in this direction. There was a growing appreciation by industry in general of the value of industrial hire-purchase. The company had large interests in agriculture, public works contractors' plant, road making and repairing machinery, and merchant shipping. The consent of the meeting was given to an increase in the company's borrowing powers up to a limit of £3 million, to enable it to meet the continuing demand for its facilities.

Birmingham & Midland Motor Omnibus Co. Ltd.—Net traffic and other receipts for the year ended December 31, 1946, were £1,569,789. The balance of the profit and loss account amounted to £358,538, and after adding £235,136

British and Irish Railway Stocks and Shares

Stocks	Highest 1946	Lowest 1946	Prices May 27, 1947	Rise Fall
G.W.R.				
Cons. Ord.	61½	54½	54½	—
5% Con. Pref. ...	126½	107	118½	– 1
5% Red. Pref. (1950)	106½	102½	104½	—
5% Rt. Charge ...	140½	122½	133½	– 1
5% Cons. Guar. ...	137½	118½	130½	—
4% Deb.	129½	106	124	– ½
4½% Deb.	129½	107	124½	—
4½% Deb.	130½	114	125½	—
5% Deb.	142½	125	137½	—
2½% Deb.	95½	81½	92½	—
L.M.S.R.				
Ord.	30½	26½	27	—
4% Pref. (1923) ...	64	52½	58	—
4% Pref.	86	75½	79½	—
5% Red. Pref. (1955)	105½	97	101½	—
4% Guar.	108½	100	102½	—
4% Deb.	120	103	113½	—
5% Red. Deb. (1952)	108½	105½	104½	—
L.N.E.R.				
5% Pref. Ord. ...	7	5	6½	—
Def. Ord.	3½	2½	3½	—
4% First Pref. ...	59½	50½	54	—
4% Second Pref. ...	29½	25⅝	26½	—
5% Red. Pref. (1955)	104	97	98½	—
4% First Guar. ...	107	98	101½	—
4% Second Guar. ...	101	90	95	—
3% Deb.	104	87½	98½	—
4% Deb.	119½	102½	113½	—
4½% Sinking Fund Red. Deb.	107½	101½	103½	—
SOUTHERN				
Pref. Ord.	79½	70	72	– ½
Def. Ord.	24	19½	22½	– ¼
5% Pref.	125½	107	118½	—
5% Red. Pref. (1964)	115½	106½	111½	—
5% Guar. Pref. ...	137½	119	130½	—
5% Red. Guar. Pref. (1957)	115½	107½	111½	—
4% Deb.	129½	105½	123½	– ½
5% Deb.	139½	125½	134½	—
4% Red. Deb. (1962-67)	113½	104½	110½	—
4% Red. Deb. (1970-80)	115½	104½	111½	—
FORTH BRIDGE				
4% Deb.	109	103	103½	—
4% Guar.	105	102	99½	—
L.P.T.B.				
4½ "A"	133½	120½	127½	—
5% "A"	142½	130½	136½	—
3% Guar. (1967-72) ...	108	98½	105	+ ½
5% "B"	128½	117½	123½	—
"C"	64½	56½	62½	—
MERSEY				
Ord.	34	30	33	—
3% Perp. Pref. ...	76	69	72½	—
4% Perp. Deb. ...	117½	103	111	—
3% Perp. Deb. ...	98	81	92½	—
IRELAND*				
BELFAST & C.D.				
Ord.	8½	6	7½	—
G. NORTHERN				
Ord.	41⅞	30½	31	—
Pref.	63⅝	52	50	—
Guar.	97½	78½	89½	+ 2½
Deb.	107	97½	101	—
IRISH TRANSPORT				
Common	19/2½	16/9	15/6	—
3% Deb.	107	100	105	—

* Latest available quotation

OFFICIAL NOTICES

CONVERSION OF LOCOMOTIVES FROM COAL TO OIL BURNING. Ministry of Transport plan for converting 1,217 locomotives. Equipment of oil burning locomotives on the G.W.R., fully described and illustrated, which forms the basis of the scheme. Reprinted from *The Railway Gazette*, January 18, August 16 and 30, 1946. *Price* 2*s*. *By post* 2*s*. 2*d*.

STEEL STRUCTURES purchased, dismantled and removed. Industrial steel structures re-built, re-roofed and renovated. Steel factory buildings dismantled, re-erected or adapted on other sites.—BELLMAN HANGARS LIMITED, Terminal House, Grosvenor Gardens, London, S.W.1. Sloane 5259.

RAILWAY SIGNALLING AND COMMUNICATIONS, INSTALLATION AND MAINTENANCE. A practical guide, especially intended to help Signal Inspectors, Installers, Fitters, Linemen, Draughtsmen, and all concerned with installing and maintaining Signal, Telegraph, and Telephone Equipment. 416 pages. Many illustrations. Cloth, 8*s*. *By post* 8*s*. 6*d*.

brought forward, there was a sum available of £593,674. A dividend of 5 per cent. was paid on the ordinary shares on October 16 last year, and the directors now recommend a final dividend of 15 per cent., together with a bonus of 10 per cent. This distribution, together with a dividend of 5 per cent. on the cumulative preference shares, will leave £593,674 to be carried forward. During the year the company has received sums totalling £947,000 in respect of assets realised from the liquidation of two subsidiary companies, namely, the North Warwickshire Motor Omnibus & Traction Co. Ltd., and The Worcestershire Motor Transport Co. Ltd. This was £654,149 in excess of the valuation shown in the company's books, and it is expected that further small distributions will be received when the liquidations are completed. A special distribution of £654,000 was made to the ordinary shareholders on October 31, 1946, being part of the capital profits realised from the company's investments in the foregoing liquidated subsidiary undertakings.

L.M.S.R. Windermere Steamers Restored.—The L.M.S.R. Windermere lake steamers resumed regular daily sailings between lakeside piers on May 25, after having been withdrawn during the winter. Two modern oil-burning motor yachts, *Swan* and *Teal*, each accommodating 870 passengers, are operating four services daily from Lakeside to Bowness and Ambleside. On mid-week days during June, July, and August, the petrol-driven motor yacht *Cygnet* will augment these services to provide half-hourly afternoon sailings between Bowness and Ambleside piers.

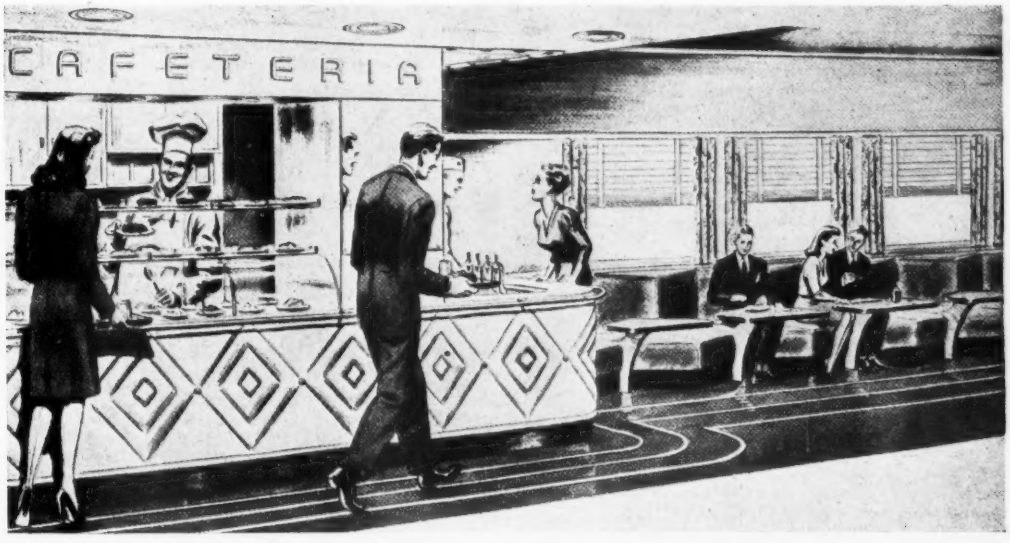
Derwent Valley Light Railway.—The Chairman of the Derwent Valley Light Railway Company, Mr. Claude W. Thompson, said at the annual general meeting on May 8 that the company was not included in the nationalisation scheme at the moment. The Transport Bill was confined solely to those companies which were controlled during the war and were now under Government guarantee. After giving considerable thought to the position, the directors had decided that they ought to be included in the Bill, notwithstanding what other light railways might do. A conference was arranged with Ministry of Transport representatives, but after full and friendly discussions it was evident that there was no chance of the Minister amending the Bill in the company's favour. They, therefore, had two alternatives, either of struggling under private enterprise, or applying in due course, to the Transport Commissioners to be taken over. The board favoured the second course, but would be glad to consult shareholders if they so desired, before submitting a case to the commissioners. While they had no more liking than the main-line companies for nationalisation, they were an integral part of the railway system of the country, and it was their duty to look after the interest of traders and staff, as well as the shareholders of the company.

Devon General Omnibus & Touring Co. Ltd.—The report for the year ended December 31, 1946, shows a profit, after providing for taxation, depreciation, and other charges, of £106,830. After adding the balance of £22,849 from 1945, and appropriating £392 to employees' assistance account, there is £129,332 available. The directors recommend a dividend of 15 per cent. and a bonus of 5 per cent. on the ordinary stock; and a dividend of 7 per cent. on the cumulative preference stock, leaving £101,557 to be carried forward. Addressing the annual general meeting of the company on May 1, the Chairman, Mr. J. S. Wills, spoke of the effects of rising costs. Vehicle prices were now more than double the 1939 figure, and this, coupled with substantial increases in wages, maintenance, and other costs, underlined the company's achievement of still providing travel at pre-war prices. Mr. Wells said that because of the Government's "wooden-headed determination to interfere with the smooth running of an efficient industry," the future of their company was uncertain, but every effort would be made for efficiency.

Forthcoming Meetings

June 7 (*Sat.*).—The Permanent Way Institution (Manchester and Liverpool Section), visit to Kearsley Power Station, by permission of the Chief Engineer of Lancashire Electric Power Station.

Pullman-Standard Quick-Service Cafeteria Car



A cafeteria car, seating 56 persons, has been designed by the Pullman-Standard Car Manufacturing Company. It includes a soda fountain and provides for diagonal seats

Railway Stock Market

Business in stock markets has been well maintained; British Funds were steady, and industrial features were not lacking, although in most sections buying interest was selective and again mainly based on expected benefits from the abolition of E.P.T. Colliery shares responded to current market break-up value estimates, with Staveley outstandingly good following the second interim payment, which came as a surprise. Chemical shares continued active under the lead of Monsanto, while the paint and kindred sections were cheered by the Goodlass Wall dividend increase. Particularly in regard to iron and steel shares, there has been a tendency to follow the Labour Party conference for any fresh hint or indication of Government plans. Guest Keen, United Steel, and Thomas & Baldwins moved moderately lower, small declines again predominating in this section, due mainly to buyers showing caution despite the attractive yields available. Nevertheless, in many quarters the belief appears to be gaining ground that whatever the future, shares of leading iron and steel companies probably are moderately priced at current levels.

In the event of nationalisation, fair compensation, it is contended, would justify higher market prices than those now current, and the shares would no doubt offer an attractive "back door" means of acquiring Government securities. Moreover, if nationalisation were not brought forward or postponed for a lengthy period, dividends above current rates would be a probability, bearing in mind that in many cases substantial benefits seem likely to be derived from the abolition of E.P.T.

Tube Investments have been a firm feature at close on £7, following news of the decision to form a new holding company to merge the aluminium interests of Tube Investments and Hawker Siddeley Aircraft. Upwards of £5,000,000 will be involved in the new company, which is regarded in the City as an important sequel to the steel shortage and the growing use of aluminium and light alloys.

Home rails again moved within narrow limits, the market following the Transport Bill discussions in the House of Lords, although no fresh developments of importance have emerged which seem likely to influence the value of the stocks. The latter continue to be valued on the "compensation" terms. The reason why prices remain well below the take-over prices is the fact that investors generally are not attracted by stocks threatened by nationalisation. Nevertheless, there is a growing belief that in the second half of the year, prices of home rails seem likely to approximate to the take-over levels. The prospect of further increases in railway charges has had little or no influence on the market, where it is realised that, thanks to the railway control agreement, the railways will receive their fixed rental, and the sums available for dividend payments should not differ materially from the previous year.

L.N.E.R. stocks have been inclined to attract rather more attention on the view that they seem relatively undervalued, the second preference strengthening to 27, and the first preference to 54, while both the guaranteed stocks rallied half a point.

There has been wider activity in the foreign railway market, Argentine rails being stimulated by hopes of an early statement indicating the basis of the compensation "share out" in respect of the different classes of stocks. Buyers appeared to be favouring preference stocks, Buenos Ayres Great Southern 5 per cent. and 6 per cent. moving up to 73 and 50½ respectively, while Buenos Ayres Western 4½ per cent. preference rose to 89. Central Argentine 4½ per cent. preference was 33½, and the 6 per cent. preference 36. Debenture stocks were slightly higher where changed, but ordinary stocks failed to hold earlier gains. There was, however, not a great deal of business in Argentine rails, and prices were inclined to move sharply in response to moderate buying or selling.

Brazil rails have continued to fluctuate sharply, falling heavily at one time on fears that negotiations for taking over the railways may be regarded by Brazil as indefinitely postponed. Later, however, buyers reappeared on the assumption that take-over developments seem probable later in the year. Although above lowest levels touched, Leopoldina at 15 was well down on balance, with the preference and debenture stocks at 45 and 70½ respectively. After a sharp fall Great Western of Brazil rallied 5s. at 77s. 6d. San Paulo displayed firmness at 186. Central Uruguay stocks moved back, less hopeful "take-over" views gaining ground. Central Uruguay ordinary fell to 23, and the second debentures to 63. After being down to 20½, United of Havana 1906 debentures rallied to 22. Canadian Pacifics became firmer at 16¾.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffic for week: Total this year	Traffic for week: Inc. or dec. compared with 1945/6	No. of Week	Aggregate traffics to date: Totals 1946/7	Aggregate traffics to date: Totals 1945/6	Aggregate traffics to date: Increase or decrease	Shares or Stock	Prices: Highest 1945	Prices: Lowest 1945	Prices: May 27, 1947
				£	£		£	£	£				
South & Central America	Antofagasta	834	18.5.47	40,280	+ 6,550	20	768,690	661,300	+ 107,390	Ord. Stk.	12	8¾	15½
	Arg. N.E.	753	17.5.47	ps.293,200	+ps. 4,000	46	ps.14,731,000	ps.13,605,700	+ps.1,125,300	,,	10	5¾	14½
	Bolivar	174	Apr., 1947	$109,336	− $1,089	17	$449,648	$464,650	− $15,002	6 p.c. Deb.	8¼	5½	15
	Brazil	—	—	—	—	—	—	—	—	Bonds	25	17	35
	B.A. Pacific	2,771	17.5.47	ps.2,550,000	+ps.208,000	46	ps.111,677,000	ps.105,363,000	+ps.6,314,000	Ord. Stk.	7	5	10
	B.A.G.S.	5,080	17.5.47	ps.3,190,000	−ps.227,000	46	ps.167,664,000	ps.164,873,000	+ ps.2,791.000	Ord. Stk.	13¾	10½	19
	B.A. Western	1,924	17.5.47	ps.1,392,000	+ps. 14,000	46	ps.61,058,000	ps.55,462,000	+ ps.5,596,000	,,	12¾	9½	28
	Cent. Argentine	3,700	17.5.47	ps.3,021,575	−ps 111,145	46	ps.148,336,585	ps.145,329,696	+ ps.3,006,889	,,	9¾	7	20½
	Do.	—	—	—	—	—	—	—	—	Dfd.	5	2⅞	17½
	Cent. Uruguay	970	17.5.47	18,366	− 28,825	46	1,719,495	1,826,181	− 106,686	Ord. Stk.	7½	4	23
	Costa Rica	262	Mar., 1947	32,528	+ 1,760	39	252,900	252,872	+ 28	Stk.	16½	13	12
	Dorada	70	Apr., 1947	29,700	+ 400	17	119,200	115,275	+ 3,925	1 Mt. Deb.	103	102	106½
	Entre Rios	808	17.5.47	ps.387,000	−ps.55,000	46	ps.19,722,000	ps.19,552,100	+ ps.169,900	Ord. Stk.	7½	4½	8
	G.W. of Brazil	1,030	17.5.47	25,400	+ 500	20	704,100	589,500	+ 114.600	Ord. Stk.	30/-	23/6	4½
	Inter. Ctl. Amer.	794	Mar., 1947	$1,264,115	+ $273,636	13	$3,591,376	$2,914,695	+ $676,681	—	—	—	—
	La Guaira	22¾	Apr., 1947	$101,968	− $11,228	17	$457,043	$460,888	− $3,845	5 p.c. Deb.	78	70	87½
	Leopoldina	1,9 8	17.5.47	60,089	+ 7,241	20	1,265,259	1,121,940	+ 143,319	Ord. Stk.	4½	3½	15
	Mexican	483	31.5.46	ps.1,464,000	+ps.459,100	22	ps.7,706,200	ps.13,441,600	+ps.5,220,200	Ord. Stk.	¼	¼	¼
	Midland Uruguay	319	Apr., 1947	17,503	+ 343	43	167,262	181,451	− 14,189	—	—	—	—
	Nitrate	382	15.5.47	9,756	+ 2,633	19	80,185	83,031	− 2,846	Ord. Sh.	75/6	67/6	85/-
	N.W. of Uruguay	113	Apr., 1947	4,477	− 657	44	53,910	54,507	− 597	—	—	—	—
	Paraguay Cent.	274	16.5.47	$55,314	− $30,336	46	$2,884,174	$2,804,274	+ $79,900	Pr.Li.Stk.	79⅛	77	60½
	Peru Corp.	1,059	Apr., 1947	161,601	+ 12,510	43	1,518,215	1,401,933	+ 116.282	Pref.	10⅛	7⅛	10½
	Salvador	100	Mar., 1947	c209,000	+ c34,000	39	c1,338,000	c1,255,000	+ c83,000	—	—	—	—
	San Paulo	153½	—	—	—	—	—	—	—	Ord. Stk.	60¼	50½	187½
	Taltal	156	Apr., 1947	3,385	− 1,795	43	41,015	33,200	+ 7,815	Ord. Sh.	17/-	10/6	20/-
	United of Havana	1,301	18.5.47	102,990	+ 32,254	46	3,124,971	2,736,390	+ 338,581	Ord. Stk.	3	1	3
	Uruguay Northern	73	Apr., 1947	1,438	− 145	43	12,767	17,350	− 4,583	—	—	—	—
Canada	Canadian National	23,535	Feb., 1947	7,767,000	+ 553,250	8	15,981,500	14,939,000	+ 1,042,500	—	—	—	—
	Canadian Pacific	17,037	21.5.47	1,524,500	+ 280,750	20	28,841,750	27,207,500	+ 1,634,250	Ord. Stk.	24	14¾	16¾
Various	Barsi Light†	202	Mar., 1947	26,032	+ 3,375	52	271,575	272,272	− 697	Ord. Stk.	131	123	112½
	Beira	204	Feb., 1947	90,568	+ 24,422	20	446,240	352,628	+ 93,612	—	—	—	—
	Egyptian Delta	607	20.4.47	15,556	− 909	3	33,178	33,174	+ 4	Prf. Sh.	10	8¼	6¼
	Manila	—	—	—	—	—	—	—	—	B. Deb.	71	55¼	70
	Mid. of W. Australia	277	Mar., 1947	18,239	− 127	39	148,908	152,484	− 3,576	Inc. Deb.	97½	85	65
	Nigeria	1,900	Feb., 1947	353,073	+ 2,154	46	4,193,473	3,153,983	+ 1,039,490	—	—	—	—
	Rhodesia	2,445	Feb., 1947	533,750	+ 67,632	20	2,761,173	2,476,064	+ 285,109	—	—	—	—
	South African	13,323	26.4.47	1,169,703	+ 159,612	4	4,502,119	4,093,505	+ 408,614	—	—	—	—
	Victoria	4,774	Jan., 1947	1,314,795	+ 110,075	30	—	—	—	—	—	—	—

† Receipts are calculated @ 1s. 6d. to the rupee